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May 13, 2014

Ms. Tammy Moore - LU-9J U.S. EPA Region V Corrective Action Section 77 West Jackson Boulevard Chicago, IL 60604-3507

Re:

Long-Term Monitoring Program 1<sup>st</sup> Quarter 2014 Data Report

Solutia Inc., W. G. Krummrich Plant, Sauget, IL

Dear Ms. Moore:

Enclosed please find the Long-Term Monitoring Program 1<sup>st</sup> Quarter 2014 Data Report for Solutia Inc.'s W. G. Krummrich Plant, Sauget, IL. Results from supplemental piezometers GWE-3D, 5S, and 5M and supplemental wells GWE-5D and ESL-MW-A, C1, and D1 are included in this report.

If you have any questions or comments regarding this report, please contact me at (314) 674-3312 or gmrina@eastman.com

Sincerely,

Gerald M. Rinaldi

Manager, Remediation Services

**Enclosure** 

cc: Distribution List

#### **DISTRIBUTION LIST**

Long-Term Monitoring Program 1<sup>st</sup> Quarter 2014 Data Report Solutia Inc., W. G. Krummrich Plant, Sauget, IL

## **USEPA**

Stephanie Linebaugh USEPA Region 5 - SR6J, 77 West Jackson Boulevard, Chicago, IL 60604

## Solutia

**Donn Haines** 

500 Monsanto Avenue, Sauget, IL 62206-1198

## 1 <sup>S T</sup> QUARTER 2014 DATA REPORT

# LONG-TERM MONITORING PROGRAM

SOLUTIA INC. W.G. KRUMMRICH FACILITY SAUGET, ILLINOIS

Prepared for
Solutia Inc.
575 Maryville Centre Drive
St. Louis, Missouri 63141

May 2014



URS Corporation 1001 Highland Plaza Drive West Suite 300 St. Louis, MO 63110 (314) 429-0100 Project: 21563600.00001

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#### 1.0 INTRODUCTION

This report presents the results of the 1<sup>st</sup> Quarter 2014 (1Q14) sampling event performed at the Solutia Inc. (Solutia) W.G. Krummrich (WGK) Facility located in Sauget, Illinois (Site). This sampling event was conducted in accordance with the Revised Long-Term Monitoring Program (LTMP) Work Plan (Solutia 2009). The Site location is presented in **Figure 1**.

The LTMP was designed to evaluate the effectiveness of monitored natural attenuation (MNA), including: 1) a clear and meaningful trend of decreasing contaminant mass; 2) data that indirectly demonstrate the types and rates of natural attenuation processes active at the site; and 3) data that directly demonstrate the occurrence of biodegradation processes at the site.

Groundwater Sampling Location and Frequency – As specified in the Revised LTMP Work Plan, groundwater samples were collected from five monitoring wells downgradient of the Former Chlorobenzene Process Area (CPA-MW-1D through CPA-MW-5D) and five monitoring wells downgradient of the Former Benzene Storage Area (BSA-MW-1S and BSA-MW-2D through BSA-MW-5D) to assess attenuation processes in the American Bottoms aquifer, as impacted groundwater from these source areas migrates toward and discharges to the Mississippi River. Additionally, at the request of USEPA, Groundwater samples were also collected from monitoring well GWE-5D and piezometers GWE-3D, GWE-5S, and GWE-5M along with East St. Louis (ESL) monitoring wells ESL-MW-A, ESL-MW-C1, and ESL-MW-D1, all located approximately 1.0 - 1.5 miles north of WGK.

Monitoring wells CPA-MW-1D, 2D, 3D, 4D, and 5D are located within the limiting flow lines downgradient of the Former Chlorobenzene Process Area. Monitoring wells BSA-MW-1S, 2D, 3D, 4D, and 5D are located within the limiting flow lines downgradient of the Former Benzene Storage Area. Source areas and monitoring well locations are presented in **Figure 2**.

**Groundwater Sampling Parameters** – During the 1Q14 groundwater sampling event, groundwater samples from the seventeen monitoring wells described above were analyzed (via USEPA Method 8260B) for benzene, chlorobenzene, 1,2-dichlorobenzene, 1,3-dichlorobenzene, and 1,4-dichlorobenzene to demonstrate a trend of decreasing contaminant mass and/or concentrations over time. In accordance with USEPA comments regarding the Long-Term Monitoring Plan, the following constituents are included in the groundwater monitoring parameter list on a semi-annual basis (1<sup>st</sup> and 3<sup>rd</sup> Quarters):

- 4-Chloroaniline: CPA-MW-3D, CPA-MW-4D, and CPA-MW-5D
- 2-Chlorophenol: All BSA and CPA series wells
- 1, 2, 4-Trichlorobenzene: All BSA and CPA series wells
- 1,4-Dioxane: BSA-MW-2D, BSA-MW-3D, BSA-MW-4D, and BSA-MW-5D

Samples for analysis of MNA parameters were collected from seventeen monitoring wells. Evaluation of the types of active natural attenuation processes at the site is based on the following key geochemical parameters:

• Electron Donors: Organic Carbon (Total and Dissolved)

Electron Acceptors: Iron (Total and Dissolved)

Manganese (Total and Dissolved)

Nitrate

Sulfate

Biodegradation Byproducts: Carbon Dioxide

Chloride

Methane

Biodegradation Indicators: Alkalinity

Direct demonstration of the occurrence of biodegradation processes is completed quarterly utilizing Microbial Insights (<a href="www.microbe.com">www.microbe.com</a>) Bio-Trap® Samplers for Phospholipid Fatty Acid (PLFA) Analysis, along with Bio-Trap® samplers baited with benzene or chlorobenzene for Stable Isotope Probing (SIP) analysis.

**Surface Water and Sediment Sampling** – Surface water and sediment samples are collected during winter low flow conditions and during summer low flow conditions as part of the site long-term monitoring program. This typically coincides with the 1<sup>st</sup> and 3<sup>rd</sup> quarter groundwater sampling events. The objective of the surface water and sediment monitoring program is to assess the impact of contaminated groundwater discharging to the Mississippi River north of the Groundwater Migration Control System (GMCS). However, due to unfavorable river conditions (e.g., excessively low water and/or ice flow) during the first quarter, surface water and sediment samples could not be collected.

#### 2.0 FIELD PROCEDURES

URS Corporation (URS) conducted 1Q14 LTMP field activities on January 30-31 and February 3-4, 7, 10-14, 18, and 20, 2014. Field activities could not be completed on consecutive days due to adverse weather conditions. Activities were completed in accordance with procedures outlined in the Revised LTMP Work Plan, including the collection of appropriate quality assurance and quality control (QA/QC) samples. The following section summarizes field investigative procedures:

**Groundwater Level Measurements** – URS personnel used an electronic oil/water interface probe to measure depth to static groundwater levels, the thickness of non-aqueous phase liquid

(NAPL) if present, and total well depth to 0.01 feet. Depth to groundwater measurements were collected on January 30 and 31, 2014 from accessible existing wells (i.e., BSA-, CPA-, ESL-GM-, GWE-, K-, PS-MW-, and PMA-series) and piezometer clusters (installed for the Sauget Area 2 RI/FS and WGK CA-750 Environmental Indicator projects) specified in the Revised LTMP Work Plan (**Figure 3**). NAPL was not detected within any of the monitoring wells or piezometers gauged in 1Q14.

Well gauging information for the 1Q14 event is presented in **Table 1**. As the middle and deep hydrogeologic units are the primary migration pathway for constituents present in groundwater at the WGK Facility, a groundwater potentiometric surface map based on water level data from wells screened in the Middle Hydrogeologic Unit (MHU) and Deep Hydrogeologic Unit (DHU) is presented as **Figure 3**.

**Groundwater Sampling** - Low-flow sampling techniques were used for groundwater sample collection. At each monitoring well, disposable, low-density polyethylene tubing was attached to a submersible pump or peristaltic pump (GWE-3D), which was then lowered into the well to the middle of the screened interval. Monitoring wells were purged at a rate of approximately 300 to 400 mL/minute to minimize drawdown. If significant drawdown occurred, flow rates were reduced.

Drawdown was measured periodically throughout purging to ensure that it did not exceed 25% of the distance between the pump intake and the top of the screen. Once the flow rate and drawdown were stable, field measurements were collected approximately every two to four minutes. Purging of a well was considered complete when the following water quality parameters remained stable over three consecutive flow-through cell volumes:

Parameter	Stabilization Guidelines
Dissolved Oxygen (DO)	+/- 10% or +/-0.2 mg/L, whichever is greatest
Oxidation-Reduction Potential (ORP)	+/- 20 mV
рН	+/- 0.2 units
Specific Conductivity	+/- 3%

Sampling commenced upon completion of purging. Prior to sample collection, the flow-through cell was bypassed to allow for collection of uncompromised groundwater. Samples were collected at a flow rate less than or equal to the rate at which stabilization was achieved. Sample containers were filled based on laboratory analysis to be performed, in the following order:

- Volatile Organic Compounds (VOCs)
- Semivolatile Organic Compounds (SVOCs)

- Gas Sensitive Parameters (e.g., methane, carbon dioxide)
- General Chemistry (e.g., alkalinity, chloride, total and dissolved iron, total and dissolved manganese, nitrate, sulfate, total and dissolved organic carbon, and ferrous iron)

Samples collected for ferrous iron, dissolved iron, dissolved manganese, and dissolved organic carbon analysis were filtered in the field using in-line 0.2 micron disposable filters, represented by a notation of "F (0.2)" in the sample nomenclature.

Quality assurance/quality control (QA/QC) samples consisting of analytical duplicates (AD) and equipment blanks (EB) were collected at a rate of 10%, and matrix spike/matrix spike duplicates (MS/MSD) were collected at a rate of 5%. In addition, trip blanks accompanied each shipment containing samples for VOC analysis.

Each investigative or QA/QC sample was labeled immediately following collection. Each sample identification number consisted of the following nomenclature "AAA-MW#-MMYY-QAC" where:

- "AAA" denotes "Benzene Storage Area (BSA)", "Chlorobenzene Process Area (CPA)",
   "East St. Louis (ESL)", or "Groundwater Evaluation (GWE)" and "MW-#" denotes
   "Monitoring Well Number":
- "MMYY" Month and year of sampling quarter, e.g.: February (1st quarter), 2014 (0214)
- "QAC" denotes QA/QC sample
  - o AD Analytical Duplicate
  - o **EB** Equipment Blank
  - o **MS** or **MSD** Matrix Spike or Matrix Spike Duplicate

Upon collection and labeling, sample containers were immediately placed inside an iced cooler, packed in such a way as to help prevent breakage and maintain inside temperature at or below approximately 4°C. Field personnel recorded the project identification and number, sample description/location, required analysis, date and time of sample collection, type and matrix of sample, number of sample containers, preservative used (if applicable), analysis requested/comments, and sampler signature/date/time, with permanent ink on a chain-of-custody (COC). Coolers were sealed between the lid and sides with a custody seal, and then shipped to TestAmerica in Savannah, Georgia by means of an overnight delivery service. Sampling data forms are included in **Appendix A**, while copies of COCs are included in **Appendix B**.

Field personnel and equipment were decontaminated according to procedures specified in the Revised LTMP Work Plan to ensure the health and safety of those present, maintain sample

integrity, and minimize movement of contamination between the work area and off-site locations. Equipment used on-site was decontaminated prior to beginning work, between sampling locations and/or uses, and prior to demobilizing from the site. Non-disposable purging and sampling equipment was decontaminated between each sample acquisition by washing with an Liquinox® or equivalent detergent wash and a distilled water rinse. Personnel and small equipment decontamination was performed at the sample locations. Disposable sampling equipment, such as gloves were collected and bagged on a daily basis and managed in accordance with Solutia procedures. Purge water was containerized and handled per Solutia procedures.

**Biodegradation Evaluation Sampling** - Bio-Trap<sup>®</sup> samplers and Bio-Trap<sup>®</sup> samplers baited with benzene or chlorobenzene, provided by Microbial Insights, Inc. (Rockford, TN), were utilized in the LTMP wells (except GWE-5 cluster, ESL wells, and GWE-3D) to provide information regarding biodegradation potential of the Shallow Hydrogeologic Unit (SHU), the MHU, and the DHU. Bio-Trap<sup>®</sup> samplers are passive sampling tools which, over time, collect microbes across a membrane that serves as the sampling matrix. When baited with <sup>13</sup>C labeled benzene or chlorobenzene, the Bio-Traps<sup>®</sup> can also be used to measure the degradation of benzene or chlorobenzene utilizing a method also known as stable isotope probing (SIP).

On February 20-21, 2014, URS field personnel deployed Bio-Trap<sup>®</sup> samplers in each of the LTMP wells (except GWE-5 cluster, ESL wells, and GWE-3D) for PLFA analysis. A benzene baited Bio-Trap<sup>®</sup> and a chlorobenzene baited Bio-Trap<sup>®</sup> were placed in monitoring wells BSA-MW-2D and CPA-MW-3D, respectively. Bio-Trap<sup>®</sup> samplers were attached to a stainless steel line secured to the well cap and lowered to the middle of the well screen.

On March 24, 2014, the Bio-Trap<sup>®</sup> samplers were retrieved from the wells, sealed in laboratory supplied bags, labeled with the proper well identification and placed in an iced sample cooler with a signed COC. Sealed sample coolers were sent to Microbial Insights, Inc. for analysis.

#### 3.0 LABORATORY PROCEDURES

Samples were analyzed by TestAmerica for VOCs, SVOCs, and MNA parameters, using the following methodologies:

- VOCs, via USEPA SW-846 Method 8260B
- SVOCs, via USEPA SW-846 Method 8270D
- MNA parameters: alkalinity (310.1), carbon dioxide (310.1), chloride (325.2), total and dissolved iron (6010C), total and dissolved manganese (6010C), dissolved gases (RSK 175), nitrate (353.2), sulfate (375.4), and total and dissolved organic carbon (415.1).

Laboratory results were provided in electronic and hard copy formats.

#### 4.0 QUALITY ASSURANCE

Analytical data were reviewed for quality and completeness, as described in the Revised Long Term Monitoring Work Plan. Data qualifiers were added, as appropriate, and are included on the data tables and the laboratory result pages. The Quality Assurance report is included as **Appendix C**. The laboratory reports along with data reviews are included in **Appendix D**.

A total of twenty-one groundwater samples (seventeen investigative samples, two field duplicate pair, and one MS/MSD pair) were prepared and analyzed by TestAmerica Savannah for combinations of VOCs, SVOCs, dissolved gases, metals, and general chemistry. Additionally, two equipment blanks were prepared and analyzed by TestAmerica. Ten trip blank sets were included in the coolers that contained samples for VOC analysis and were analyzed for VOCs. The results for the various analyses were submitted as sample delivery groups (SDGs) KPS106 through KPS115. The samples contained in SDGs KPS106 through KPS115 are listed below:

KF	S106									
BSA-MW-3D-0214	1Q14 LTM Trip Blank #1									
CPA-MW-5D-0214										
KPS107										
BSA-MW-2D-0214	CPA-MW-3D-0214-AD									
CPA-MW-3D-0214	1Q14 LTM Trip Blank #2									
KF	KPS108									
BSA-MW-4D-0214	BSA-MW-5D-0214-EB									
BSA-MW-5D-0214	1Q14 LTM Trip Blank #3									
KF	S109									
GWE-5S-0214	GWE-5D-0214									
GWE-5M-0214	1Q14 LTM Trip Blank #4									
KF	S110									
ESL-MW-A-0214	1Q14 LTM Trip Blank #5									
ESL-MW-C1-0214										
KF	S111									
CPA-MW-2D-0214	ESL-MW-D1-0214									
CPA-MW-2D-0214-AD	1Q14 LTM Trip Blank #6									
KF	S112									
BSA-MW-1S-0214	1Q14 LTM Trip Blank #7									
BSA-MW-1S-0214-EB										
KF	S113									
CPA-MW-1D-0214	1Q14 LTM Trip Blank #8									

KPS114									
GWE-3D-0214 LTM Trip Blank #9									
KPS	KPS115								
CPA-MW-4D-0214	1Q14 LTM Trip Blank #10								

Evaluation of the groundwater analytical data followed procedures outlined in the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (USEPA 2008), USEPA Contract Laboratory Program National Functional Guidelines for Superfund Inorganic Data Review (USEPA 2010), and the Revised LTMP Work Plan (Solutia 2009).

Based on the above mentioned criteria, groundwater results reported for the analyses performed were accepted for their intended use. Acceptable levels of accuracy, precision, and representativeness (based on MS/MSD, LCS, surrogate compounds, and field duplicate results) were achieved for this data set, except where noted in this report. Completeness, which is defined to be the percentage of analytical results that are judged to be valid, including estimated detect/non-detect (J/UJ) data, was 100% percent.

#### 5.0 OBSERVATIONS

Groundwater analytical detections and MNA results for the 1Q14 LTMP sampling event are presented in **Tables 2** and **3**, respectively. Benzene and chlorobenzenes were reported in samples collected from the LTMP wells during this sampling event. Each of these constituents is discussed below:

**Benzene** – Benzene was detected in samples collected from fourteen of the seventeen wells, at concentrations ranging from 1.3 μg/L (ESL-MW-C1) to 560,000 μg/L (BSA-MW-1S).

Downgradient of the Former Benzene Storage Area, benzene was detected in the DHU at concentrations of 130,000  $\mu$ g/L (BSA-MW-2D) and 52  $\mu$ g/L (BSA-MW-3D). Near the river north of the GMCS, benzene was detected in the DHU at concentrations of 58  $\mu$ g/L and 24  $\mu$ g/L (BSA-MW-4D and BSA-MW-5D, respectively).

Benzene was detected at the Former Chlorobenzene Process Area (CPA) at a concentration of 7,200  $\mu$ g/L (CPA-MW-1D). Downgradient of the Former Chlorobenzene Process Area, benzene was detected at concentrations of 960/1,000  $\mu$ g/L (CPA-MW-2D and duplicate), 13,000/14,000  $\mu$ g/L (CPA-MW-3D and duplicate), and 23  $\mu$ g/L (CPA-MW-4D).

Benzene was not detected near the river north of the GMCS at monitoring well CPA-MW-5D.

Benzene was detected approximately one mile north of the Solutia WGK Facility at concentrations of 1.6  $\mu$ g/L (ESL-MW-A), 1.3  $\mu$ g/L (ESL-MW-C1), 62  $\mu$ g/L (ESL-MW-D1), 57  $\mu$ g/L (GWE-3D), and 2.7  $\mu$ g/L (GWE-5D). Benzene was not detected at GWE-5S or GWE-5M.

**Chlorobenzenes (Total)** – Total chlorobenzenes (i.e., sum of chlorobenzene, 1,2-dichlorobenzene, 1,3-dichlorobenzene, and 1,4, dichlorobenzene) were detected in thirteen of the seventeen wells sampled in 1Q14, at concentrations ranging from 5.4  $\mu$ g/L (ESL-MW-C1) to 41,500  $\mu$ g/L (CPA-MW-1D).

Downgradient of the Former Chlorobenzene Process Area, total chlorobenzenes were detected in the DHU at concentrations of 34,970/34,820  $\mu$ g/L at the North Tank Farm (CPA-MW-2D and duplicate), along with concentrations of 270/290  $\mu$ g/L (CPA-MW-3D and duplicate) and 274.9  $\mu$ g/L (CPA-MW-4D). Total chlorobenzenes were detected in the DHU near the river north of the GMCS at a concentration of 1,900  $\mu$ g/L (CPA-MW-5D).

Downgradient of the Former Benzene Storage Area, total chlorobenzenes were detected at a concentration of 3,020  $\mu$ g/L (BSA-MW-3D). North of the SA2 GMCS, near the river, total chlorobenzenes were detected in the DHU at concentrations of 2,255  $\mu$ g/L (BSA-MW-4D) and 465.1  $\mu$ g/L (BSA-MW-5D).

Total chlorobenzenes were detected approximately one mile north of the Solutia WGK Facility at concentrations of 8.7  $\mu$ g/L (ESL-MW-A), 5.4  $\mu$ g/L (ESL-MW-C1), 2,560  $\mu$ g/L (ESL-MW-D1), 2,468  $\mu$ g/L (GWE-3D), and 83.8  $\mu$ g/L (GWE-5D). Total chlorobenzenes were not detected at GWE-5S or GWE-5M.

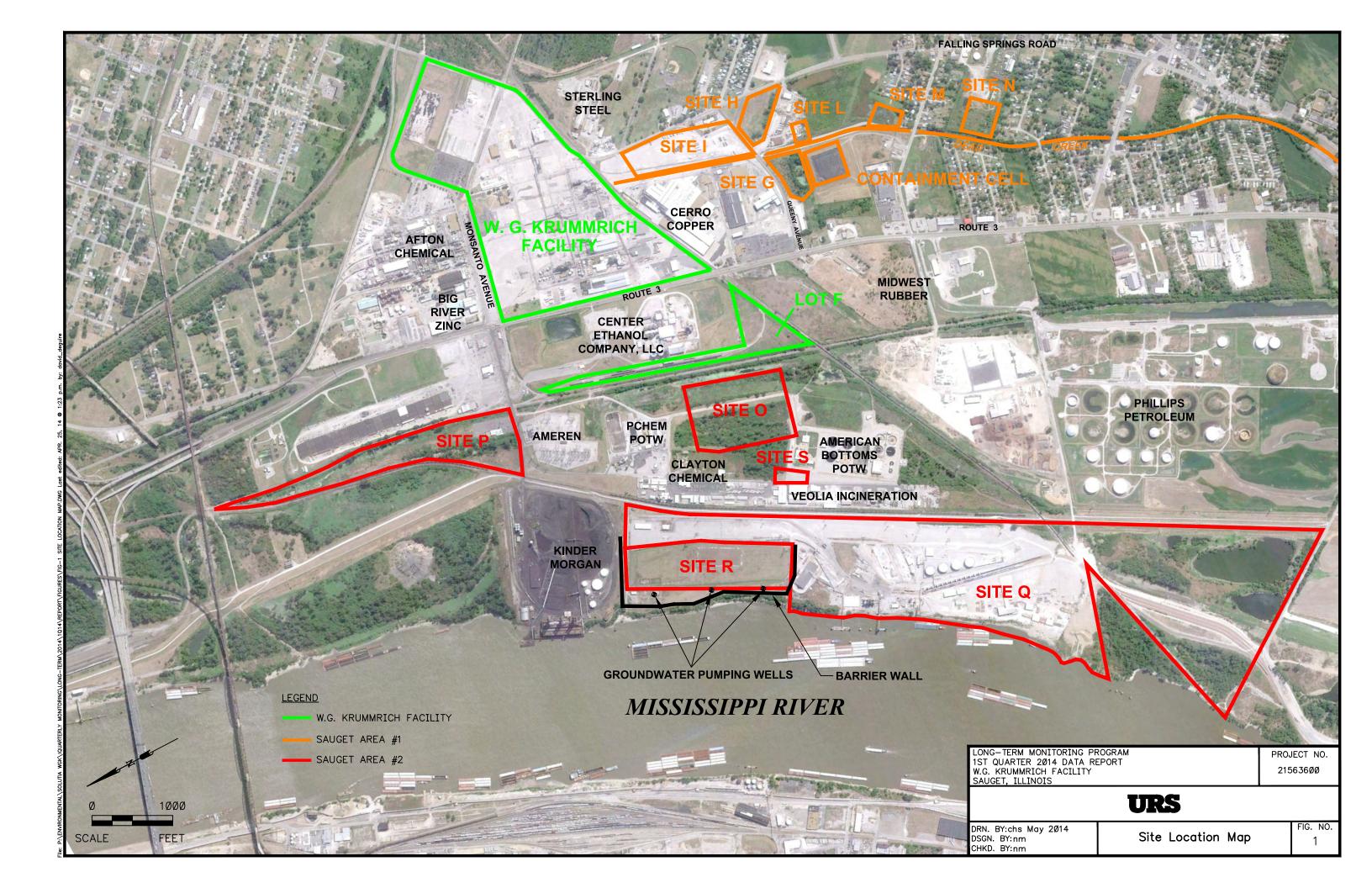
Figure 4 displays benzene and total chlorobenzenes results from the 1Q14 sampling event.

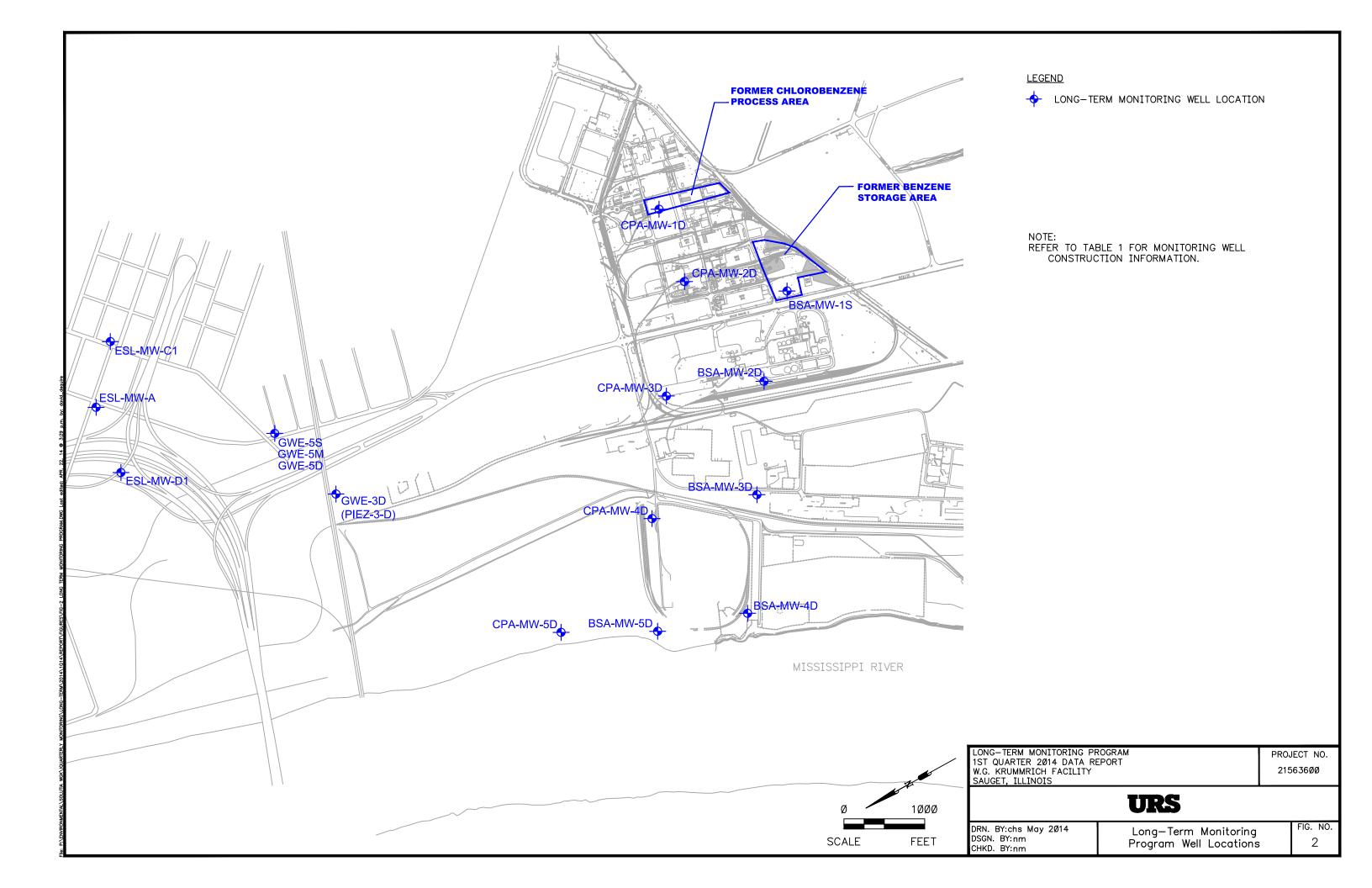
**Monitored Natural Attenuation** – The MNA results for this quarter are presented in **Table 3**. PLFA and SIP laboratory results are included in **Appendix E**. Per the Executive Summary of the SIP Study (**Appendix E**): "Incorporation of <sup>13</sup>C [carbon-13] into the biomass in wells BSA-MW-2D-0314 and CPA-MW-3D-0314 conclusively demonstrated that benzene and chlorobenzene biodegradation occurred under existing site conditions". Elevated levels of carbon dioxide and methane, which are biodegradation byproducts, in a majority of the LTM wells provide further evidence to support the occurrence of natural attenuation.

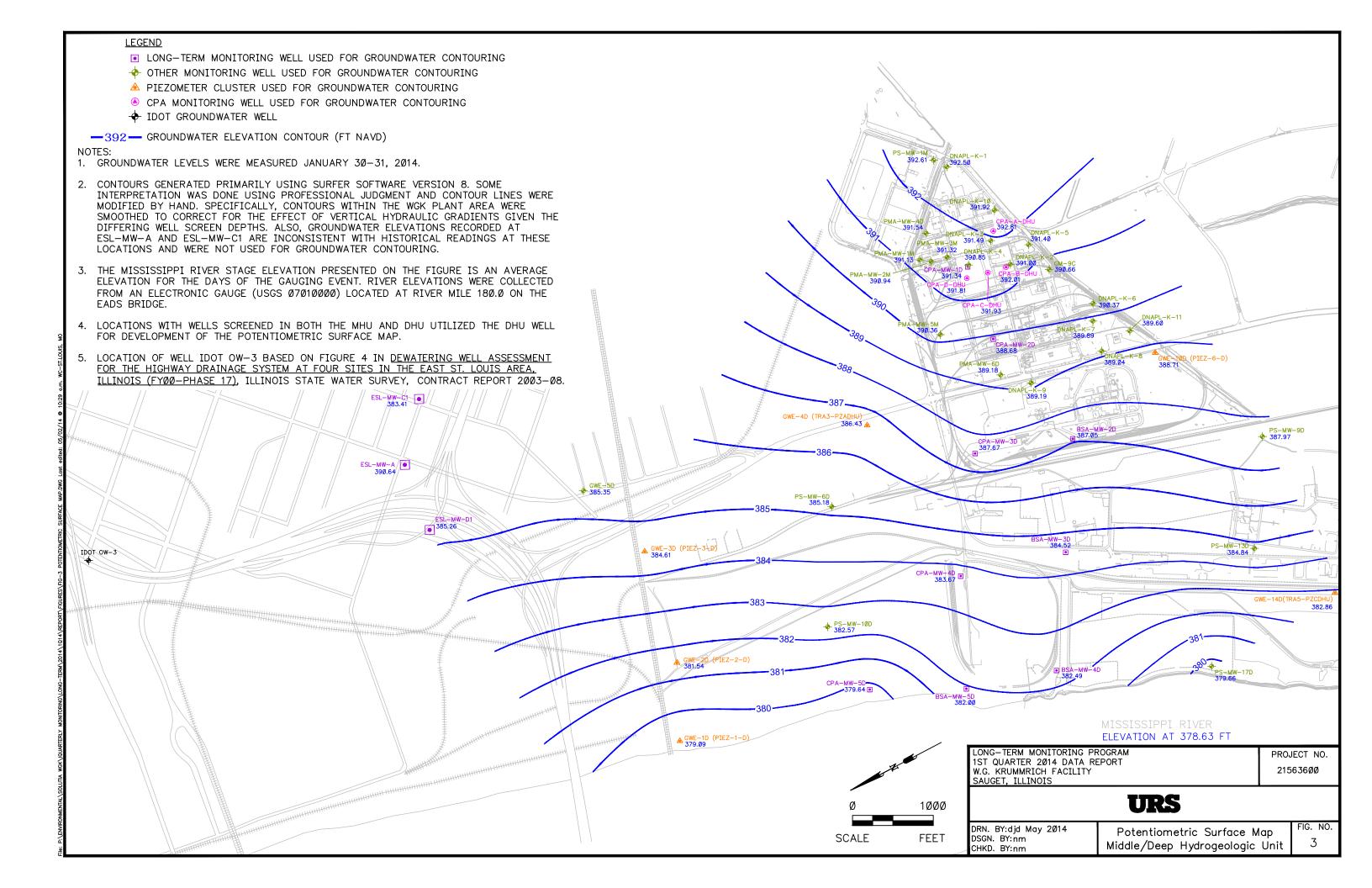
#### 6.0 REFERENCES

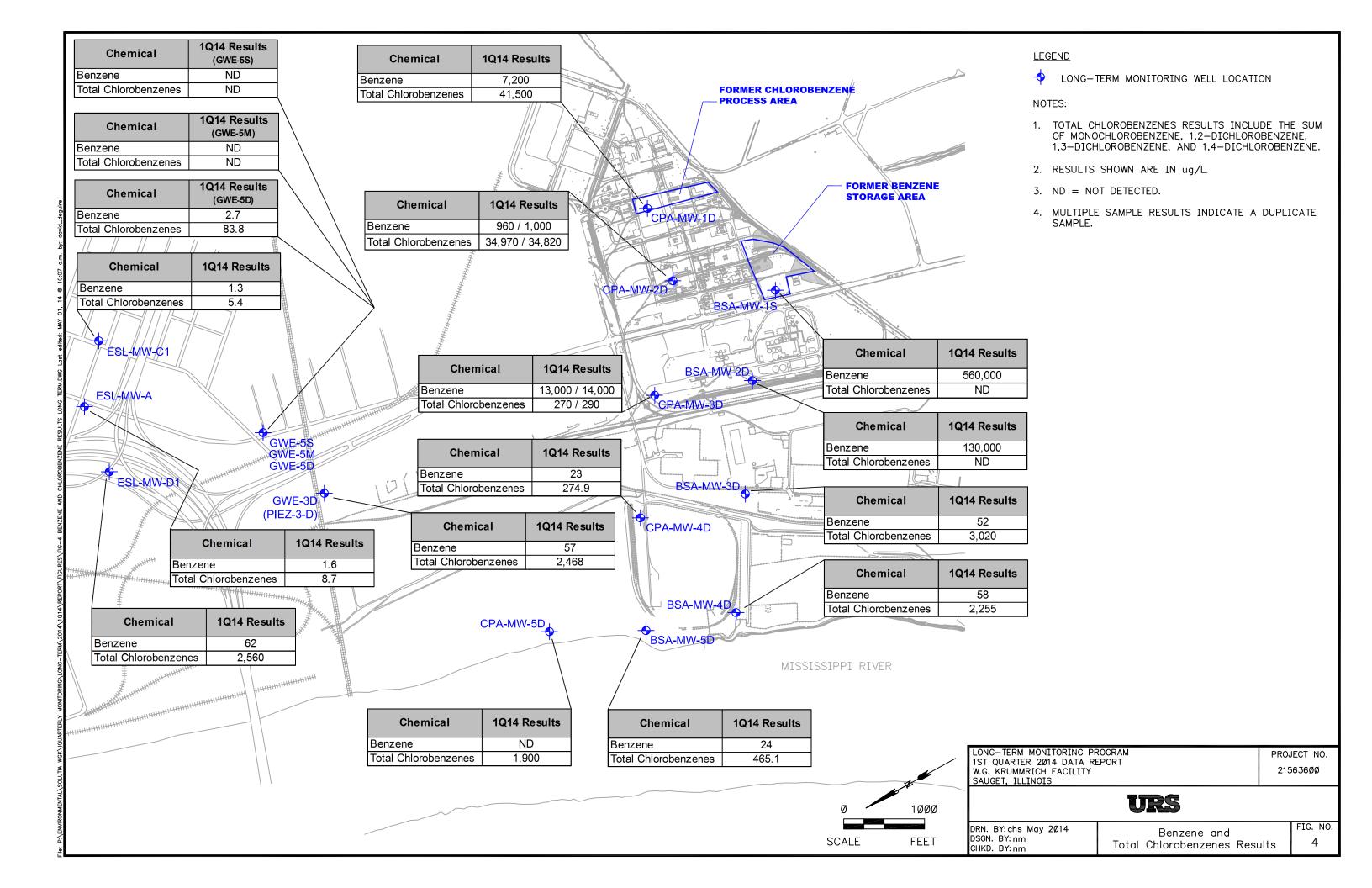
- Solutia Inc, 2009. Revised Long Term Monitoring Program Work Plan, Solutia Inc., W.G. Krummrich Facility, Sauget, Illinois, May 2009.
- USEPA, 2010. Contract Laboratory Program National Functional Guidelines for Superfund Inorganic Data Review.
- USEPA, 2008. Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review.

## **Figures**









## **Tables**

Table 1
Monitoring Well Gauging Information

			Construct	ion Details	January 30-31, 2014						
Well ID	Ground Elevation* (feet)	Casing Elevation* (feet)	Depth to Top of Screen (feet bgs)	Depth to Bottom of Screen (feet bgs)	Top of Screen Elevation* (feet)	Bottom of Screen Elevation* (feet)	Depth to Water (feet btoc)	NAPL Thickness (feet)	Depth to Bottom** (feet btoc)	Water Elevation* (feet)	
<b>Shallow Hydrogeolo</b>	gic Unit (SHI	U 395-380 fee	t NAVD 88)								
BSA-MW-1S	409.49	412.31	19.68	24.68	389.81	384.81	23.04	-	27.31	389.27	
GWE-5S	408.47	408.05	17.91	27.91	390.56	380.56	22.42	-	27.88	385.63	
Middle Hydrogeolog	ic Unit (MHU	380-350 feet	NAVD 88)								
GWE-5M	408.59	408.20	48.10	58.10	360.49	350.49	22.63	-	58.08	385.57	
PMA-MW-1M	410.32	410.08	54.54	59.54	355.78	350.78	18.95	-	59.62	391.13	
PMA-MW-2M	412.26	411.93	56.87	61.87	355.39	350.39	20.99	-	61.29	390.94	
PMA-MW-3M	412.36	412.10	57.07	62.07	355.29	350.29	20.78	-	61.80	391.32	
PMA-MW-5M	411.27	410.97	52.17	57.17	359.10	354.10	20.61	-	57.00	390.36	
PS-MW-1M	409.37	412.59	37.78	42.78	371.59	366.59	19.98	-	46.03	392.61	
Deep Hydrogeologic	Deep Hydrogeologic Unit (DHU 350 feet NAVD 88 - Bedrock)										
BSA-MW-2D	412.00	415.13	68.92	73.92	343.08	338.08	28.08	-	77.03	387.05	
BSA-MW-3D	412.91	415.74	107.02	112.02	305.89	300.89	31.22	-	114.84	384.52	
BSA-MW-4D	425.00	424.69	118.54	123.54	306.46	301.46	42.20	-	123.22	382.49	
BSA-MW-5D	420.80	420.49	115.85	120.85	304.95	299.95	38.49	-	120.99	382.00	
CPA-A-DHU	413.95	416.24	108.00	113.30	305.95	300.65	23.43	-	115.23	392.81	
CPA-B-DHU	409.12	408.68	101.00	106.50	308.12	302.62	16.67	-	105.57	392.01	
CPA-C-DHU	408.92	408.57	101.00	106.00	307.92	302.92	16.64	-	105.52	391.93	
CPA-D-DHU	409.63	412.20	101.00	105.90	308.63	303.73	20.39	-	108.31	391.81	
CPA-MW-1D	408.62	412.23	66.12	71.12	342.50	337.50	20.89	-	74.70	391.34	
CPA-MW-2D	408.51	408.20	99.96	104.96	308.55	303.55	19.52	-	104.67	388.68	
CPA-MW-3D	410.87	410.67	108.20	113.20	302.67	297.67	23.00	-	112.85	387.67	
CPA-MW-4D	421.57	421.20	116.44	121.44	305.13	300.13	37.53	-	121.01	383.67	
CPA-MW-5D	411.03	413.15	107.63	112.63	303.40	298.40	33.51	-	114.70	379.64	
DNAPL-K-1	413.07	415.56	108.20	123.20	304.87	289.87	23.06	-	123.20	392.50	
DNAPL-K-2	407.94	407.72	97.63	112.63	310.31	295.31	16.72	-	112.28	391.00	
DNAPL-K-3	412.13	415.91	104.80	119.80	307.33	292.33	24.42	-	123.09	391.49	
DNAPL-K-4	409.48	412.53	102.55	117.55	306.93	291.93	21.68	-	118.35	390.85	
DNAPL-K-5	412.27	411.91	102.15	117.15	310.12	295.12	20.51	-	116.56	391.40	
DNAPL-K-6	410.43	410.09	102.47	117.47	307.96	292.96	19.72	-	116.95	390.37	

Table 1
Monitoring Well Gauging Information

			Constructi	ion Details			January 30-31, 2014					
Well ID	Ground Elevation* (feet)	Casing Elevation* (feet)	Depth to Top of Screen (feet bgs)	Depth to Bottom of Screen (feet bgs)	Top of Screen Elevation* (feet)	Bottom of Screen Elevation* (feet)	Depth to Water (feet btoc)	NAPL Thickness (feet)	Depth to Bottom** (feet btoc)	Water Elevation* (feet)		
Deep Hydrogeologic	Deep Hydrogeologic Unit (DHU 350 feet NAVD 88 - Bedrock)											
DNAPL-K-7	408.32	407.72	100.40	115.40	307.92	292.92	17.83	-	115.38	389.89		
DNAPL-K-8	408.56	411.38	102.65	117.65	305.91	290.91	22.34	-	117.61	389.04		
DNAPL-K-9	406.45	405.97	97.42	112.42	309.03	294.03	16.78	-	111.21	389.19		
DNAPL-K-10	413.50	413.25	105.43	120.43	308.07	293.07	21.33	-	120.12	391.92		
DNAPL-K-11	412.20	411.78	105.46	120.46	306.74	291.74	22.18	-	120.30	389.60		
GM-9C	409.54	411.21	88.00	108.00	321.54	301.54	20.55	-	108.30	390.66		
GWE-1D	412.80	415.60	117.00	127.00	295.80	285.80	36.51	-	128.40	379.09		
GWE-2D	417.45	417.14	127.00	137.00	290.45	280.45	35.60	-	136.69	381.54		
GWE-3D	415.03	417.66	104.60	114.60	313.06	303.06	33.05	-	114.96	384.61		
GWE-4D	406.05	405.74	74.00	80.00	332.05	326.05	19.31	-	78.79	386.43		
GWE-5D	408.79	408.38	100.43	105.43	308.36	303.36	23.03	-	105.20	385.35		
GWE-10D	410.15	412.87	102.50	112.50	307.65	297.65	24.16	-	114.89	388.71		
GWE-14D	420.47	422.90	90.00	96.00	330.47	324.47	40.04	-	97.10	382.86		
ESL-MW-A	412.93	412.59	105.50	110.50	307.43	302.43	21.95	-	108.70	390.64		
ESL-MW-C1	410.09	409.79	104.00	109.00	306.09	301.09	26.38	-	109.95	383.41		
ESL-MW-D1	416.38	416.04	114.00	119.00	302.38	297.38	30.78	-	119.33	385.26		
PMA-MW-4D	411.22	410.88	68.84	73.84	342.38	337.38	19.34	-	73.30	391.54		
PMA-MW-6D	407.63	407.32	96.49	101.49	311.14	306.14	18.14	-	101.32	389.18		
PS-MW-6D	404.11	406.63	102.32	107.32	304.31	299.31	21.45	-	109.83	385.18		
PS-MW-9D	403.92	403.52	100.40	105.40	303.52	298.52	15.55	-	105.16	387.97		
PS-MW-10D	409.63	412.18	103.78	108.78	308.40	303.40	29.61	-	111.32	382.57		
PS-MW-13D	405.80	405.53	106.08	111.08	299.72	294.72	20.69	-	110.18	384.84		
PS-MW-17D	420.22	423.26	121.25	126.25	298.97	293.97	43.60	-	134.04	379.66		
SA2-MW-1D	403.79	406.03	105.01	115.01	301.02	291.02	29.97	-	102.31	376.06		

#### Notes:

bgs - below ground surface

btoc - below top of casing

<sup>\* -</sup> Elevation based upon North American Vertical Datum (NAVD) 88 datum

<sup>\*\* -</sup> Total depths are measured annually during the first quarter of each year

Table 2
Groundwater Analytical Results

			١	/OCs (µg/L)			SVOCs (μg/L)			
Sample ID	Sample Date	Benzene	Chlorobenzene	1,2-Dichlorobenzene	1,3-Dichlorobenzene	1,4-Dichlorobenzene	4-Chloroaniline*	2-Chlorophenol*	1,4-Dioxane*	1,2,4-Trichlorobenzene*
BENZENE STORAGE A	REA									
BSA-MW-1S-0214	2/13/2014	560,000	<10,000	<10,000	<10,000	<10,000	NA	<11	NA	<11
BSA-MW-2D-0214	2/4/2014	130,000	<2,000	<2,000	<2,000	<2,000	NA	<10	16	<10
BSA-MW-3D-0214	2/3/2014	52	2,700	<50	<50	320	NA	23	<10	<10
BSA-MW-4D-0214	2/7/2014	58	2,200	<25	<25	55	NA	16	18	<10
BSA-MW-5D-0214	2/7/2014	24	460	<5	<b>&lt;</b> 5	5.1	NA	<10	<10	<10
<b>CHLOROBENZENE PR</b>	OCESS ARE	Α								
CPA-MW-1D-0214	2/14/2014	7,200	17,000	14,000	1,200	9,300	NA	<20	NA	650
CPA-MW-2D-0214	2/12/2014	960	26,000	<250	370	8,600	NA	<110	NA	<110
CPA-MW-2D-0214-AD	2/12/2014	1,000	26,000	<250	420	8,400	NA	<110	NA	<110
CPA-MW-3D-0214	2/4/2014	13,000	270	<100	<100	<100	32	<10	NA	<10
CPA-MW-3D-0214-AD	2/4/2014	14,000	290	<100	<100	<100	29	<11	NA	<11
CPA-MW-4D-0214	2/20/2014	23	270 D	1.7	<1	3.2	150	<10	NA	<10
CPA-MW-5D-0214	2/3/2014	<20	1,900	<20	<20	<20	<19	26	NA	<9.7
AREA NORTH OF WGM	(									
ESL-MW-A-0214	2/11/2014	1.6	3.5	2.2	<1	3	NA	NA	NA	NA
ESL-MW-C1-0214	2/11/2014	1.3	2	1.5	<1	1.9	NA	NA	NA	NA
ESL-MW-D1-0214	2/12/2014	62	2,500	<25	<25	60	NA	NA	NA	NA
GWE-3D-0214	2/18/2014	57	2,200	28	<25	240	NA	NA	NA	NA
GWE-5S-0214	2/10/2014	<1	<1	<1	<1	<1	NA	NA	NA	NA
GWE-5M-0214	2/10/2014	<1	<1	<1	<1	<1	NA	NA	NA	NA
GWE-5D-0214	2/10/2014	2.7	73	2.2	<2	8.6	NA	NA	NA	NA

#### Notes:

μg/L = micrograms per liter

**BOLD** indicates concentration greater than reporting limit.

AD = Analytical Duplicate

NA = Sample not analyzed for select analyte in accordance with Revised LTMP Work Plan

D = Compound analyzed at a dilution

<sup>&</sup>lt; = Result is non-detect, less than the reporting limit given

<sup>\* =</sup> Indicates samples that are collected semi-annually (1st and 3rd Quarter)

Table 3
Monitored Natural Attenuation Results Summary

Sample ID	Sample Date	Alkalinity (mg/L)	Carbon Dioxide (mg/L)	Chloride (mg/L)	Dissolved Oxygen (mg/L)	Ethane (ug/L)	Ethylene (ug/L)	Ferrous Iron (mg/L)	Iron (mg/L)	Iron, Dissolved (mg/L)	Manganese (mg/L)	Manganese, Dissolved (mg/L)	Methane (ug/L)	Nitrogen, Nitrate (mg/L)	Sulfate as SO4 (mg/L)	Total Organic Carbon (mg/L)	Dissolved Organic Carbon (mg/L)	ORP (mV)
BENZENE STORAGE AREA	4																	
BSA-MW-01S-0214	2/13/2014	920	60	110	0.02	<1.1	<1		10		1		5,900	<0.05	<5	10		-153.14
BSA-MW-01S-F(0.2)-0214	2/13/2014							>3.30		10		1					9.8 J	
BSA-MW-2D-0214	2/4/2014	730	46	100	0.00	11	<1		3.5		0.56		8,700	<0.05	<5	6.8		-143.10
BSA-MW-2D-F(0.2)-0214	2/4/2014							2.87		3.5		0.56					6.3	
BSA-MW-3D-0214	2/3/2014	560	42	140	0.03	2.6	<1		11		0.54		1,500	<0.05	31	4.1		-126.09
BSA-MW-3D-F(0.2)-0214	2/3/2014							2.83		11		0.53					3.7	
BSA-MW-04D-0214	2/7/2014	520	35	98	0.12	2.4	<1		6.7		0.53		270	<0.05	130	4.9		-102.26
BSA-MW-04D-F(0.2)-0214	2/7/2014							-		6.7		0.53					4.7 J	
BSA-MW-05D-0214	2/7/2014	680	50	230	0.00	15	<1		11		0.25		12,000	<0.05	<5	8.9		-138.07
BSA-MW-05D-F(0.2)-0214	2/7/2014							>3.30		12		0.26					8.7 J	
CHLOROBENZENE PROCE	SS AREA																	
CPA-MW-1D-0214	2/14/2014	820	<5	92	0.00	10	<1		0.55		0.079		8,300	< 0.05	<5	10 J		-133.04
CPA-MW-1D-F(0.2)-0214	2/14/2014							0.25		0.28		0.049					130 J	
CPA-MW-2D-0214	2/12/2014	440	29	59 J	0.00	<1.1	<1		10		0.42		24	<0.05	56	7.9		-119.03
CPA-MW-2D-F(0.2)-0214	2/12/2014							2.02		8.4		0.42					7.3 H J	
CPA-MW-3D-0214	2/4/2014	590	6.1	350	0.00	22	<1		12		0.78		18,000	<0.05	<50	9.2		-120.25
CPA-MW-3D-F(0.2)-0214	2/4/2014							2.95		12		0.79					8.4 J	
CPA-MW-4D-0214	2/20/2014	600	29	170	0.00	12	<1		12		0.34		13,000	<0.05	<50	7.9		-138.85
CPA-MW-4D-F(0.2)-0214	2/20/2014							-		12		0.33					8.9	
CPA-MW-5D-0214	2/3/2014	530	61	260	0.12	3.9	<1		19		0.59		1,700	<0.05	87	5.2		-85.47
CPA-MW-5D-F(0.2)-0214	2/3/2014							>3.30		19		0.6					4.9	
AREA NORTH OF WGK																		
ESL-MW-A-0214	2/11/2014	270	15	68	0.00	<1.1	<1		11		0.34		2.1	0.52 J	480	4		-107.99
ESL-MW-A-F(0.2)-0214	2/11/2014							1.12		11		0.35					3.4	
ESL-MW-C1-0214	2/11/2014	330	18	99	0.00	<1.1	<1		12		0.42		2.3	<0.05	760	3.6		-116.07
ESL-MW-C1-F(0.2)-0214	2/11/2014							3.08		12		0.42					3.6	
ESL-MW-D1-0214	2/12/2014	370	31	120	0.00	<1.1	<1		16		0.41		18	<0.05	560	3.5		-113.86
ESL-MW-D1-F(0.2)-0214	2/12/2014							>3.30		16		0.4					3.5 H J	
GWE-3D-0214	2/18/2014	400	30	310	0.04	<1.1	<1		17		0.54		90	<0.05	330	4.5		-125.04
GWE-3D-F(0.2)-0214	2/18/2014					L.,.		>3.30	0.000	16	0.10	0.53	2.00	0.00 /			4.7	111.00
GWE-5S-0214	2/10/2014	470	52	20	0.09	<1.1	<1		0.062		0.18	0.40	0.92	0.28 J	74	2.4		114.69
GWE-5S-F(0.2)-0214	2/10/2014	400	- 00	47	0.00	.4.4		<0.03	0.4	<0.05	4.0	0.18	0.5	-0.05	400	0.0	2.5 J	400.44
GWE-5M-0214	2/10/2014	480	38	47	0.00	<1.1	<1	0.04	24	0.4	1.3	4.0	35	<0.05	130	2.2	0.0	-138.44
GWE-5M-F(0.2)-0214	2/10/2014	250	24	00	0.00	-1.1		2.21	12	24	0.20	1.3		40.0F	220	0.7	2.2	474.47
GWE-5D-0214	2/10/2014	350	24	90	0.00	<1.1	<1	50.00	13	12	0.39	0.4	53	<0.05	330	2.7	2.5	-174.47
GWE-5D-F(0.2)-0214	2/10/2014		l	i	l	l	l	>3.30	l	13	l	0.4	l				2.5	<u> </u>

#### Notes

DO and ORP were measured in the field using an In-Situ Troll 9500 equipped with a flow-thru cell. Values presented represent final measurements before sampling.

Ferrous Iron readings were measured in the field using a Hach DR-890 Colorimeter after the groundwater passed through a 0.2 µm filter

F(0.2) = Sample was filtered utilizing a 0.2  $\mu$ m filter during sample collection

H = Prepped or analyzed outside of specified holding time

J = Estimated detected value

mg/L = milligrams per liter

mV = millivolts

ug/L = micrograms per liter

< = Result is non-detect, less than the reporting limit given - indicated as a U qualifier on lab data

A blank space indicates sample not analyzed for select analyte.

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# Appendix A Groundwater Purging and Sampling Forms



Troll 9000 02/13/14 Low-Flow System ISI Low-Flow Log

Operator Name sj mc
Company Name URS Corporation
Project Name Solutia WGK
Site Name Quarterly Groundwater Sampling - LTM

## Pump Information:

Pump Model/Type
Tubing Type
Tubing Diameter
Tubing Length
Pump placement from TOC

Proactive SS Monsoon
LDPE
0.19 [in]
31 [ft]
25.5 [ft]

#### **Well Information:**

 Well Id
 BSA-MW-1S

 Well diameter
 2 [in]

 Well total depth
 27.34 [ft]

 Depth to top of screen
 22.5 [ft]

 Screen length
 60 [in]

 Depth to Water
 23.28 [ft]

#### **Pumping information:**

Final pumping rate 400 [mL/min]
Flowcell volume 772.84 [mL]
Calculated Sample Rate 116 [sec]
Sample rate 116 [sec]
Stabilized drawdown 0 [in]

## **Low-Flow Sampling Stabilization Summary**

	Time	Temp [F]	pH [pH]	Cond [µS/cm @25C]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-0.1	+/-1	+/-0.2	+/-20
				+/-3 %	+/-10 %	+/-10 %	
	14:59:25	63.64	7.27	1994.19	11.23	0.02	-152.11
	15:01:22	63.18	7.27	1991.27	11.25	0.03	-152.35
Last 5 Readings	15:03:20	63.01	7.27	1991.27	12.86	0.05	-151.44
	15:05:17	63.00	7.28	1990.58	10.00	0.04	-152.20
	15:07:12	63.01	7.28	1991.62	9.92	0.02	-153.14
	15:03:20	-0.17	0.00	0.00	1.61	0.02	0.91
Variance in last 3 readings	15:05:17	-0.01	0.00	-0.68	-2.86	-0.02	-0.76
	15:07:12	0.01	0.00	1.04	-0.08	-0.02	-0.93



Troll 9000 02/04/14 Low-Flow System ISI Low-Flow Log

Project I	Information:
-----------	--------------

Operator Name Company Name Project Name Site Name sjmc
URS Corporation
Solutia WGK
Quarterly Groundwater Sampling - LTM

**Pump Information:** 

Pump Model/Type
Tubing Type
LDPE
Tubing Diameter
Tubing Length
Pump placement from TOC

Proactive SS Monsoon
LDPE
0.19 [in]
80.55 [ft]
74.55 [ft]

#### **Well Information:**

Well Id	BSA-MW-2D
Well diameter	2 [in]
Well total depth	77.05 [ft]
Depth to top of screen	72.05 [ft]
Screen length	60 [in]
Depth to Water	28.3 [ft]

#### **Pumping information:**

Final pumping rate	300 [mL/min]
Flowcell volume	1049.1 [mL]
Calculated Sample Rate	210 [sec]
Sample rate	210 [sec]
Stabilized drawdown	0 [in]

## **Low-Flow Sampling Stabilization Summary**

	Time	Temp [F]	pH [pH]	Cond [µS/cm @25C]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-0.1	+/-1	+/-0.2	+/-20
				+/-3 %	+/-10 %	+/-10 %	
	10:21:28	57.56	7.13	1549.14	7.85	0.05	-142.13
	10:24:58	57.74	7.15	1550.62	11.51	0.03	-142.29
Last 5 Readings	10:28:31	57.77	7.16	1550.92	1.69	0.00	-142.64
	10:32:01	57.76	7.17	1551.28	0.89	-0.01	-143.12
	10:35:33	57.85	7.18	1552.37	0.34	-0.01	-143.10
	10:28:31	0.03	0.02	0.31	-9.82	-0.03	-0.35
Variance in last 3 readings	10:32:01	-0.01	0.01	0.36	-0.80	-0.01	-0.48
	10:35:33	0.09	0.01	1.09	-0.55	-0.01	0.02



Troll 9000 02/03/14 Low-Flow System ISI Low-Flow Log

112.35 [ft]

Project Information:		Pump Information:
Operator Name	mc sj	Pump Model/Type

Company Name URS Corporation Project Name Solutia WGK

Site Name Quarterly Groundwater Sampling - LTM

Pump Model/Type
Tubing Type
LDPE
Tubing Diameter
Tubing Length

Proactive SS Monsoon

LOPE
118.35 [ft]

Pump placement from TOC

Well Information: Pumping information:

Well IdBSA-MW-3DWell diameter2 [in]Well total depth114.83 [ft]Depth to top of screen109.85 [ft]Screen length60 [in]Depth to Water31.38 [ft]

Final pumping rate 300 [mL/min]
Flowcell volume 1259.85 [mL]
Calculated Sample Rate 252 [sec]
Sample rate 252 [sec]
Stabilized drawdown 0 [in]

## **Low-Flow Sampling Stabilization Summary**

	Time	Temp [F]	pH [pH]	Cond [µS/cm @25C]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-0.1	+/-1	+/-0.2	+/-20
				+/-3 %	+/-10 %	+/-10 %	
	14:40:13	59.16	7.00	1414.30	0.69	0.10	-120.39
	14:44:27	59.26	7.01	1415.42	1.13	0.06	-123.29
Last 5 Readings	14:48:42	59.38	7.02	1415.96	2.18	0.04	-125.13
	14:52:55	58.60	7.02	1414.42	4.11	0.03	-125.94
	14:57:09	58.70	7.03	1418.21	6.93	0.03	-126.09
	14:48:42	0.12	0.01	0.54	1.05	-0.02	-1.84
Variance in last 3 readings	14:52:55	-0.77	0.01	-1.54	1.93	-0.01	-0.81
	14:57:09	0.09	0.00	3.79	2.82	0.00	-0.15



Troll 9000 02/07/14 Low-Flow System ISI Low-Flow Log

Project Information:		Pump Information:
Operator Name	sj mc	Pump Model/Type
Company Name	URS Corporation	Tubing Type

Project Name Solutia WGK

Site Name Quarterly Groundwater Sampling - LTM

Pump Model/Type
Tubing Type
Tubing Diameter
Tubing Length
Pump placement from TOC

Proactive SS Monsoon
D.19 [in]
126.73 [ft]
120.73 [ft]

Well Information: Pumping information:

 Well Id
 BSA-MW-4D

 Well diameter
 2 [in]

 Well total depth
 123.22 [ft]

 Depth to top of screen
 118.23 [ft]

 Screen length
 60 [in]

 Depth to Water
 42.52 [ft]

Final pumping rate 300 [mL/min]
Flowcell volume 1306.58 [mL]
Calculated Sample Rate 262 [sec]
Sample rate 262 [sec]
Stabilized drawdown 0 [in]

## **Low-Flow Sampling Stabilization Summary**

	Time	Temp [F]	pH [pH]	Cond [µS/cm @25C]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-0.1	+/-1	+/-0.2	+/-20
				+/-3 %	+/-10 %	+/-10 %	
	14:54:03	56.81	7.04	1459.91	1.50	0.21	-99.64
	14:58:26	57.45	7.02	1464.71	0.77	0.15	-101.36
Last 5 Readings	15:02:50	57.68	7.02	1461.07	0.77	0.12	-102.72
	15:07:14	56.30	7.02	1460.18	0.87	0.12	-102.68
	15:11:38	56.28	7.02	1465.12	1.21	0.12	-102.26
	15:02:50	0.22	0.00	-3.64	-0.01	-0.03	-1.35
Variance in last 3 readings	15:07:14	-1.38	0.00	-0.89	0.11	0.00	0.04
	15:11:38	-0.02	0.00	4.94	0.33	0.00	0.42



Troll 9000 02/07/14 Low-Flow System ISI Low-Flow Log

Operator Name Company Name Project Name Site Name sj mc URS Corporation Solutia WGK Quarterly Groundwater Sampling - LTM Pump Information: Pump Model/Type

Pump Model/Type
Tubing Type
Tubing Diameter
Tubing Length
Pump placement from TOC

Proactive SS Monsoon
0.19 [in]
124.04 [ft]
118.04 [ft]

#### **Well Information:**

Well IdBSA-MW-5DWell diameter2 [in]Well total depth121 [ft]Depth to top of screen115.54 [ft]Screen length60 [in]Depth to Water39.19 [ft]

#### **Pumping information:**

Final pumping rate 300 [mL/min]
Flowcell volume 1291.58 [mL]
Calculated Sample Rate 259 [sec]
Sample rate 259 [sec]
Stabilized drawdown 0 [in]

## **Low-Flow Sampling Stabilization Summary**

	Time	Temp [F]	pH [pH]	Cond [µS/cm @25C]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-0.1	+/-1	+/-0.2	+/-20
				+/-3 %	+/-10 %	+/-10 %	
	12:00:15	59.68	7.00	1925.45	2.71	0.04	-134.08
	12:04:37	59.78	7.02	1949.30	4.34	0.03	-135.83
Last 5 Readings	12:08:58	59.86	7.03	1950.72	5.90	0.01	-136.65
	12:13:19	59.91	7.04	1953.93	10.68	0.00	-137.08
	12:17:40	60.02	7.05	1962.84	0.99	-0.02	-138.07
	12:08:58	0.08	0.01	1.41	1.55	-0.01	-0.82
Variance in last 3 readings	12:13:19	0.05	0.01	3.22	4.78	-0.01	-0.43
	12:17:40	0.11	0.01	8.90	-9.69	-0.02	-0.99



Troll 9000 02/14/14

Low-Flow System ISI Low-Flow Log

Project Information:		Pump Information:	
Operator Name	sj nm	Pump Model/Type	Proactive SS Monsoon
Company Name	<b>URS</b> Corporation	Tubing Type	LDPE
Project Name	Solutia WGK	Tubing Diameter	0.19 [in]

0.19 [in] Site Name Tubing Length 73.32 [ft] Quarterly Groundwater Sampling - LTM Pump placement from TOC 68.32 [ft]

**Well Information: Pumping information:** 

Final pumping rate Well Id CPA-MW-1D 400 [mL/min] Well diameter Flowcell volume 1008.79 [mL] 2 [in] Well total depth 74.69 [ft] Calculated Sample Rate 152 [sec] Depth to top of screen 65.82 [ft] Sample rate 152 [sec] Stabilized drawdown Screen length 60 [in] 0 [in] Depth to Water 21.05 [ft]

## **Low-Flow Sampling Stabilization Summary**

	Time	Temp [F]	pH [pH]	Cond [µS/cm @25C]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-0.1	+/-1	+/-0.2	+/-20
				+/-3 %	+/-10 %	+/-10 %	
	10:57:31	61.06	8.34	1744.05	3.02	0.00	-96.21
	11:00:04	61.04	8.39	1771.31	1.72	-0.02	-110.43
Last 5 Readings	11:02:38	61.03	8.48	1790.00	1.01	-0.03	-121.87
	11:05:11	61.19	8.53	1805.13	1.96	-0.04	-128.69
	11:07:45	61.26	8.57	1812.32	3.95	-0.05	-133.04
	11:02:38	-0.01	0.09	18.69	-0.71	-0.01	-11.44
Variance in last 3 readings	11:05:11	0.16	0.05	15.14	0.95	-0.01	-6.82
	11:07:45	0.06	0.03	7.18	1.99	-0.01	-4.35



Troll 9000 02/12/14 Low-Flow System ISI Low-Flow Log

Project Information:		Pump Information:	
Operator Name	sj mc	Pump Model/Type	Proactive SS Monsoon
Company Name	URS Corporation	Tubing Type	LDPE
Project Name	Solutia WGK	Tubing Diameter	0.19 [in]
Site Name	Quarterly Groundwater Sampling - LTM	Tubing Length	108.15 [ft]
		Pump placement from TOC	102.15 [ft]

Well Information: Pumping information:	
Well Id CPA-MW-2D Final pumping rate 300 [m	∟/min]
Well diameter 2 [in] Flowcell volume 1202.9	3 [mL]
Well total depth 104.66 [ft] Calculated Sample Rate 241	[sec]
Depth to top of screen 99.65 [ft] Sample rate 241	[sec]
Screen length 60 [in] Stabilized drawdown	0 [in]
Depth to Water 19.72 [ft]	

## **Low-Flow Sampling Stabilization Summary**

	Time	Temp [F]	pH [pH]	Cond [µS/cm @25C]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-0.1	+/-1	+/-0.2	+/-20
				+/-3 %	+/-10 %	+/-10 %	
	14:40:22	61.50	7.16	1203.99	10.83	0.03	-117.17
	14:44:25	61.33	7.16	1203.82	10.15	0.02	-117.62
Last 5 Readings	14:48:28	61.39	7.16	1204.53	11.38	0.01	-118.13
	14:52:30	61.18	7.16	1204.24	11.62	0.00	-118.45
	14:56:33	61.21	7.16	1205.38	5.51	-0.01	-119.03
	14:48:28	0.05	0.00	0.71	1.23	-0.01	-0.50
Variance in last 3 readings	14:52:30	-0.21	0.00	-0.29	0.24	-0.01	-0.33
	14:56:33	0.03	0.00	1.13	-6.11	-0.01	-0.58



Troll 9000 02/04/14 Low-Flow System ISI Low-Flow Log

Project	Information:	<b>Pump Information:</b>
_		

Pump Model/Type **Operator Name** sjmc Proactive SS Monsoon **URS** Corporation **Tubing Type** Company Name LDPE **Tubing Diameter Project Name** 0.19 [in] Solutia WGK Site Name **Tubing Length** 116.5 [ft] Quarterly Groundwater Sampling - LTM Pump placement from TOC 110.5 [ft]

#### Well Information: Pumping information:

Well Id CPA-MW-3D Final pumping rate 300 [mL/min] Well diameter Flowcell volume 1249.54 [mL] 2 [in] Well total depth 112.87 [ft] Calculated Sample Rate 250 [sec] Depth to top of screen 108 [ft] Sample rate 250 [sec] Stabilized drawdown Screen length 60 [in] 0 [in] Depth to Water 23.12 [ft]

## **Low-Flow Sampling Stabilization Summary**

	Time	Temp [F]	pH [pH]	Cond [µS/cm @25C]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-0.1	+/-1	+/-0.2	+/-20
				+/-3 %	+/-10 %	+/-10 %	
	12:15:12	59.82	7.00	2118.21	9.58	0.08	-115.31
	12:19:24	59.60	6.99	2150.97	15.57	0.04	-116.50
Last 5 Readings	12:23:35	59.51	6.99	2174.74	3.57	-0.01	-118.07
	12:27:47	59.33	6.98	2178.63	8.75	-0.01	-118.60
	12:31:58	59.42	6.98	2170.42	2.76	-0.03	-120.25
	12:23:35	-0.09	0.00	23.77	-12.00	-0.05	-1.57
Variance in last 3 readings	12:27:47	-0.18	0.00	3.89	5.18	-0.01	-0.52
	12:31:58	0.09	0.00	-8.21	-5.98	-0.01	-1.66



Troll 9000 02/20/14

Low-Flow System ISI Low-Flow Log

Project Information:	Pump Information:

**Operator Name** sj mc **URS** Corporation Company Name **Project Name** Solutia WGK Site Name Quarterly Groundwater Sampling - LTM Pump Model/Type Proactive SS Monsoon **Tubing Type** LDPE **Tubing Diameter** 0.19 [in] **Tubing Length** 124.57 [ft] Pump placement from TOC 118.57 [ft]

#### **Well Information:**

Well Id CPA-MW-4D Well diameter 2 [in] Well total depth 121.03 [ft] Depth to top of screen 116.07 [ft] Screen length 60 [in] Depth to Water 38 [ft]

## **Pumping information:** Final pumping rate

300 [mL/min] Flowcell volume 1294.53 [mL] Calculated Sample Rate 259 [sec] Sample rate 259 [sec] Stabilized drawdown 0 [in]

## **Low-Flow Sampling Stabilization Summary**

	Time	Temp [F]	pH [pH]	Cond [µS/cm @25C]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-0.1	+/-1	+/-0.2	+/-20
				+/-3 %	+/-10 %	+/-10 %	
	12:00:52	60.49	7.10	1678.38	11.90	-0.04	-130.61
	12:05:13	60.44	7.12	1684.68	27.44	-0.06	-133.34
Last 5 Readings	12:09:35	60.39	7.13	1687.05	2.41	-0.06	-134.45
	12:13:56	60.73	7.14	1685.39	15.36	-0.08	-136.24
	12:18:16	60.73	7.14	1694.21	-0.16	-0.10	-138.85
	12:09:35	-0.05	0.01	2.38	-25.03	0.01	-1.11
Variance in last 3 readings	12:13:56	0.34	0.01	-1.66	12.95	-0.03	-1.80
	12:18:16	0.00	0.01	8.83	-15.52	-0.02	-2.60



Troll 9000 02/03/14 Low-Flow System ISI Low-Flow Log

Project Information:		Pump Information:	
Operator Name	mc sj	Pump Model/Type	Proactive SS Monsoon
Company Name	URS Corporation	Tubing Type	LDPE
Project Name	Solutia WGK	Tubing Diameter	0.19 [in]
Site Name	Quarterly Groundwater Sampling - LTM	Tubing Length	118.25 [ft]

Pump placement from TOC 112.25 [ft] **Well Information: Pumping information:** Well Id Final pumping rate CPA-MW-5D 300 [mL/min] Well diameter Flowcell volume 1259.3 [mL] 2 [in] Well total depth 114.7 [ft] Calculated Sample Rate 252 [sec] Depth to top of screen 109.75 [ft] Sample rate 252 [sec] Screen length Stabilized drawdown 60 [in] 0 [in] Depth to Water 33.55 [ft]

## **Low-Flow Sampling Stabilization Summary**

	Time	Temp [F]	pH [pH]	Cond [µS/cm @25C]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-0.1	+/-1	+/-0.2	+/-20
				+/-3 %	+/-10 %	+/-10 %	
	0:00:00	0.00	0.00	0.00	0.00	0.00	0.00
	11:56:53	55.75	6.69	1843.25	4.84	0.23	-49.18
Last 5 Readings	12:01:06	55.88	6.72	1910.34	1.62	0.18	-67.94
	12:05:19	56.01	6.74	1944.77	0.41	0.15	-78.49
	12:09:33	56.12	6.75	1960.16	0.07	0.12	-85.47
	12:01:06	0.13	0.03	67.09	-3.22	-0.04	-18.76
Variance in last 3 readings	12:05:19	0.13	0.01	34.43	-1.21	-0.04	-10.56
	12:09:33	0.11	0.01	15.39	-0.34	-0.03	-6.97



Troll 9000 02/11/14 Low-Flow System ISI Low-Flow Log

Project Information:	
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Operator Name sj mc
Company Name URS Corporation
Project Name Solutia WGK
Site Name Quarterly Groundwater Sampling - ESL

## **Pump Information:**

Pump Model/Type
Tubing Type
Tubing Diameter
Tubing Length
Pump placement from TOC

Proactive SS Monsoon
LDPE
0.19 [in]
112.5 [ft]
107.47 [ft]

#### **Well Information:**

 Well Id
 ESL-MW-A

 Well diameter
 2 [in]

 Well total depth
 109.96 [ft]

 Depth to top of screen
 105.16 [ft]

 Screen length
 60 [in]

 Depth to Water
 26.65 [ft]

#### **Pumping information:**

Final pumping rate 300 [mL/min]
Flowcell volume 1227.24 [mL]
Calculated Sample Rate 246 [sec]
Sample rate 246 [sec]
Stabilized drawdown 0 [in]

### **Low-Flow Sampling Stabilization Summary**

	Time	Temp [F]	pH [pH]	Cond [µS/cm @25C]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-0.1	+/-1	+/-0.2	+/-20
				+/-3 %	+/-10 %	+/-10 %	
	14:31:10	57.78	7.08	1768.37	82.12	0.03	-105.32
	14:35:16	57.92	7.07	1706.23	51.34	0.00	-105.88
Last 5 Readings	14:39:25	58.21	7.06	1669.13	25.69	-0.02	-106.87
	14:43:32	58.43	7.05	1649.28	14.95	-0.03	-107.56
	14:47:40	58.49	7.05	1646.00	9.62	-0.03	-107.99
	14:39:25	0.29	-0.01	-37.10	-25.65	-0.02	-0.99
Variance in last 3 readings	14:43:32	0.22	-0.01	-19.84	-10.74	-0.01	-0.69
	14:47:40	0.06	-0.01	-3.28	-5.33	0.00	-0.43



Troll 9000 02/11/14 Low-Flow System ISI Low-Flow Log

Project	Inform	ation:
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Operator Name Company Name Project Name Site Name sj mc URS Corporation Solutia WGK

Quarterly Groundwater Sampling - ESL

#### **Pump Information:**

Pump Model/Type SS Monsoon
Tubing Type LDPE
Tubing Diameter 0.19 [in]
Tubing Length 111.19 [ft]
Pump placement from TOC 106.19 [ft]

#### **Well Information:**

Well Id	ESL-MW-C1
Well diameter	2 [in]
Well total depth	109.95 [ft]
Depth to top of screen	103.7 [ft]
Screen length	60 [in]
Depth to Water	22.28 [ft]

#### **Pumping information:**

Final pumping rate	300 [mL/min]
Flowcell volume	1219.93 [mL]
Calculated Sample Rate	244 [sec]
Sample rate	244 [sec]
Stabilized drawdown	0 [in]

## **Low-Flow Sampling Stabilization Summary**

	Time	Temp [F]	pH [pH]	Cond [µS/cm @25C]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0	+/-0	+/-0	+/-0	+/-0
Last 5 Readings	12:30:44	55.78	7.10	2227.14	23.32	0.01	-113.34
	12:34:50	55.91	7.08	2234.55	18.76	0.00	-114.28
	12:38:57	55.84	7.08	2243.81	12.79	-0.02	-114.94
	12:43:03	55.82	7.07	2251.63	10.49	-0.03	-115.63
	12:47:11	55.79	7.06	2257.28	9.75	-0.03	-116.07
Variance in last 3 readings	12:38:57	-0.06	-0.01	9.26	-5.98	-0.01	-0.65
	12:43:03	-0.02	-0.01	7.82	-2.29	-0.01	-0.70
	12:47:11	-0.03	0.00	5.65	-0.74	-0.01	-0.44



Troll 9000 02/12/14 Low-Flow System ISI Low-Flow Log

Operator Name Company Name Project Name Site Name sj mc URS Corporation Solutia WGK

Quarterly Groundwater Sampling - ESL

#### **Pump Information:**

Pump Model/Type
Tubing Type
Tubing Diameter
Tubing Length
Pump placement from TOC

Proactive SS Monsoon
LDPE
0.19 [in]
121.78 [ft]
116.78 [ft]

#### **Well Information:**

Well Id ESL-I	MW-D1
Well diameter	2 [in]
Well total depth 119	.33 [ft]
Depth to top of screen 113	.66 [ft]
Screen length	60 [in]
Depth to Water 31	.14 [ft]

#### **Pumping information:**

Final pumping rate	300 [mL/min]
Flowcell volume	1278.98 [mL]
Calculated Sample Rate	256 [sec]
Sample rate	256 [sec]
Stabilized drawdown	0 [in]

## **Low-Flow Sampling Stabilization Summary**

	Time	Temp [F]	pH [pH]	Cond [µS/cm @25C]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-0.1	+/-1	+/-0.2	+/-20
				+/-3 %	+/-10 %	+/-10 %	
	10:40:52	57.79	7.00	2052.90	49.66	0.02	-105.54
	10:45:11	57.82	7.03	2053.38	27.90	0.00	-108.61
Last 5 Readings	10:49:27	57.95	7.04	2050.09	15.26	0.00	-110.98
	10:53:45	57.76	7.06	2048.54	12.75	-0.01	-112.59
	10:58:03	57.99	7.07	2047.07	9.12	-0.02	-113.86
	10:49:27	0.13	0.02	-3.29	-12.64	-0.01	-2.37
Variance in last 3 readings	10:53:45	-0.19	0.02	-1.55	-2.51	-0.01	-1.61
	10:58:03	0.24	0.01	-1.47	-3.63	-0.01	-1.27



Troll 9000 02/18/14 Low-Flow System ISI Low-Flow Log

Project Information:	Pump Information:
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Pump Model/Type Operator Name sj mc Peristaltic Company Name **URS** Corporation **Tubing Type LDPE** Tubing Diameter **Project Name** 0.19 [in] Solutia WGK Site Name **Tubing Length** 140 [ft] Quarterly Groundwater Sampling - LTM Pump placement from TOC 112 [ft]

#### Well Information: Pumping information:

Well Id	GWE-3D	Final pumping rate	400 [mL/min]
Well diameter	1 [in]	Flowcell volume	1380.56 [mL]
Well total depth	114.94 [ft]	Calculated Sample Rate	208 [sec]
Depth to top of screen	107.23 [ft]	Sample rate	208 [sec]
Screen length	120 [in]	Stabilized drawdown	0 [in]
Depth to Water	38.5 [ft]		

## **Low-Flow Sampling Stabilization Summary**

	Time	Temp [F]	pH [pH]	Cond [µS/cm @25C]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-0.1	+/-1	+/-0.2	+/-20
				+/-3 %	+/-10 %	+/-10 %	
	12:02:35	57.66	6.88	2301.89	6.51	0.08	-121.73
	12:06:04	57.69	6.90	2283.58	6.30	0.06	-123.18
Last 5 Readings	12:09:33	57.84	6.92	2274.90	6.64	0.05	-124.24
	12:13:03	57.90	6.93	2272.90	17.25	0.04	-124.83
	12:16:32	57.91	6.94	2272.37	1.92	0.04	-125.04
	12:09:33	0.15	0.02	-8.69	0.34	-0.01	-1.06
Variance in last 3 readings	12:13:03	0.06	0.01	-1.99	10.61	-0.01	-0.59
	12:16:32	0.01	0.01	-0.53	-15.34	0.00	-0.21



Troll 9000 02/10/14 Low-Flow System ISI Low-Flow Log

Project Information:		Pump Information:	
Operator Name	mc sj	Pump Model/Type	Proactive SS Monsoon
Company Name	URS Corporation	Tubing Type	LDPE
Project Name	Solutia WGK	Tubing Diameter	0.19 [in]
Site Name	Quarterly Groundwater Sampling - SUPP	Tubing Length	30 [ft]
		Pump placement from TOC	25.5 [ft]

Well Information:		Pumping information:	
Well Id	GWE-5S	Final pumping rate	300 [mL/min]
Well diameter	2 [in]	Flowcell volume	767.26 [mL]
Well total depth	27.91 [ft]	Calculated Sample Rate	154 [sec]
Depth to top of screen	17.49 [ft]	Sample rate	154 [sec]
Screen length	120 [in]	Stabilized drawdown	0 [in]
Depth to Water	22.72 [ft]		

# **Low-Flow Sampling Stabilization Summary**

	Time	Temp [F]	pH [pH]	Cond [µS/cm @25C]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-0.1	+/-1	+/-0.2	+/-20
				+/-3 %	+/-10 %	+/-10 %	
	12:18:56	57.47	6.76	988.84	22.99	0.16	111.49
	12:21:31	57.45	6.76	987.82	14.88	0.14	112.36
Last 5 Readings	12:24:06	57.54	6.76	988.46	13.36	0.12	113.23
	12:26:41	57.96	6.76	987.96	10.36	0.11	113.96
	12:29:17	58.03	6.76	987.88	8.39	0.09	114.69
Variance in last 3 readings	12:24:06	0.08	0.00	0.63	-1.52	-0.02	0.87
	12:26:41	0.43	0.00	-0.49	-3.00	-0.01	0.73
	12:29:17	0.06	0.00	-0.09	-1.97	-0.01	0.73



Troll 9000 02/10/14 Low-Flow System ISI Low-Flow Log

Project Information:		Pump Information:	
Operator Name	sj mc	Pump Model/Type	Proactive SS Monsoon
Company Name	URS Corporation	Tubing Type	LDPE
Project Name	Solutia WGK	Tubing Diameter	0.19 [in]
Site Name	Quarterly Groundwater Sampling - SUPP	Tubing Length	52.71 [ft]
		Pump placement from TOC	57.71 [ft]

Well Information:		Pumping information:	
Well Id	GWE-5M	Final pumping rate	300 [mL/min]
Well diameter	2 [in]	Flowcell volume	893.88 [mL]
Well total depth	58.1 [ft]	Calculated Sample Rate	179 [sec]
Depth to top of screen	47.71 [ft]	Sample rate	179 [sec]
Screen length	120 [in]	Stabilized drawdown	0 [in]
Depth to Water	22.91 [ft]		

# **Low-Flow Sampling Stabilization Summary**

	Time	Temp [F]	pH [pH]	Cond [µS/cm @25C]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-0.1	+/-1	+/-0.2	+/-20
				+/-3 %	+/-10 %	+/-10 %	
	14:04:04	56.54	6.97	1320.42	25.02	-0.01	-137.47
	14:07:05	56.56	6.97	1313.58	24.34	-0.01	-138.10
Last 5 Readings	14:10:05	56.55	6.97	1323.86	24.23	-0.02	-138.60
	14:13:04	56.30	6.97	1323.00	29.98	-0.02	-138.97
	14:16:05	56.61	6.97	1324.10	8.84	-0.02	-138.44
	14:10:05	-0.01	0.00	10.28	-0.11	0.00	-0.50
Variance in last 3 readings	14:13:04	-0.24	0.00	-0.86	5.76	-0.01	-0.37
	14:16:05	0.30	0.00	1.09	-21.14	0.00	0.53



Troll 9000 02/10/14 Low-Flow System ISI Low-Flow Log

Project Information:		Pump Information:	
Operator Name	sj mc	Pump Model/Type	Proactive SS Monsoon
Company Name	URS Corporation	Tubing Type	LDPE
Project Name	Solutia WGK	Tubing Diameter	0.19 [in]
Site Name	Quarterly Groundwater Sampling - SUPP	Tubing Length	107.52 [ft]
		Pump placement from TOC	102 52 [ft]

Well Information:		Pumping information:	
Well Id	GWE-5D	Final pumping rate	300 [mL/min]
Well diameter	2 [in]	Flowcell volume	1199.47 [mL]
Well total depth	105.32 [ft]	Calculated Sample Rate	240 [sec]
Depth to top of screen	100.02 [ft]	Sample rate	240 [sec]
Screen length	60 [in]	Stabilized drawdown	0 [in]
Depth to Water	23.3 [ft]		

# **Low-Flow Sampling Stabilization Summary**

	Time	Temp [F]	pH [pH]	Cond [µS/cm @25C]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-0.1	+/-1	+/-0.2	+/-20
				+/-3 %	+/-10 %	+/-10 %	
	15:26:39	54.88	7.00	1626.40	31.57	0.05	-172.43
	15:30:39	54.98	7.02	1633.56	15.64	0.03	-174.66
Last 5 Readings	15:34:42	55.08	7.04	1635.15	9.42	0.02	-175.28
	15:38:42	54.91	7.05	1635.84	7.08	0.01	-174.87
	15:42:45	54.99	7.06	1637.04	5.86	0.00	-174.47
	15:34:42	0.10	0.02	1.59	-6.22	-0.01	-0.61
Variance in last 3 readings	15:38:42	-0.16	0.01	0.69	-2.33	-0.01	0.41
	15:42:45	0.08	0.01	1.20	-1.22	-0.01	0.41

# Appendix B Chains-of-Custody

5102 LaRoche Avenue

# Chain of Custody Record



Savannah GA 31404

phone 912.354.7858 fax 912.352.0165																		_		Test	Americ	a Labe	ratori	es, In	ı <b>c.</b>
Client Contact	Project Ma	nager: Bot	Billman			Site	Cont	ict: N	Mich:	ael C	orbet	t		Dat						COC	No:				
URS Corporation	Tel/Fax: (3	14) 743-410	98			Lab	Cont	act: N	Mich	ele K	ersey			Car	rier:	F2/	(E)	K			of		COCs		
1001 Highlands Plaza Drive West, Suite 300		Analysis T	urnaround	Time																					
St. Louis, MO 63110	Calendar	(C) or Wo	ork Days (W	) <i>Ç</i>	,					375.4															
(314) 429-0100 Phone	T/	AT if different i	rom Below 🤰	judan	1					37	w														
(314) 429-0462 FAX		2	weeks							皇	7		5							SDG	No.				
Project Name: 1Q14 LTM GW Sampling	1 🗆	1	week				İ	20		1 S	<b>≅</b>		, 60												
Site: Solutia WG Krummrich Facility		:	2 days				ڇاڍ	9	9.0	\$27	د اچ	,   .	d ii			ŀ									
PO#		:	l day			Sample	8270D*	l b	y 31	3	35.	2	Ę,	5.1											
Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Filtered Sa	SVOCs by 8270	Total Fe/Mn by 6010C	Alk/CO2 by 310.1	Chloride by 325.2/Sulfate by	Dissolved Gases by RSK 175 Nitrate by 353.2	TOC by 415.1	Dissolved Fe/Mn by 6010C	DOC by 415.6							Sam	ole <u>Sp</u> e	cific No	otes:	
CPA-MW-5D -0214	2/3/14	(230	G	Water	16		3 2	1	1	1	3 2	3										σ.			
CPA-MW- 5D - F(0.2)-0214		1230	G	Water	2	x							1	1								80-9			
K		1330	6	14/30	3		3	$\bot$														828			
CPA MW-SD-0214-MSD		1230	_/_	10/2/	<u>.</u>		2					1										0			
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BSA-MW-3D-0214	<u> </u>	1505		Wafer	16	Ц,	32	$\perp L$		13	3 3	<u>13</u>	ļ									ತ್ತ ≣			
BSA-MW-3D-FC0.2)-0214	$\bigvee$	1505	G	Wake	2	M							1		ļ							윤를			
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1Q14 LTM Trip Blank#	2/3/14			Water	2		2	┼				+			-				+ +	+	<b>–</b>				
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaO							2 1	1	1	1	2 2	1 3	1	7		+				+				-	
Possible Hazard Identification	ii, o- Other														ssed	if sai	nole	s are	retaine	d longe	r than	1 mon	thi		
Non-Hazard Flammable Skin Irritant	son I	3	nown			- 1			-	•		,			sal By		-		4ive	-			nths		
Special Instructions/QC Requirements & Comments: 214/14 MS/1950 Can Celed per N. N	)ભીવન જ	en 1. Rajn	alar																2	4°,					
Relinquished by: Walkt	Company:	URS		Date/Tin	ne: 16.	30 R	eceiv	d by:	*						C	ompar	y:			Date/	ſime:				
Relinquished by:	Company:			Date/Tir		_	eceiv	d by	;			•			C	mpar	y:			Date/	ſime:		•		
Relinquished by:	Company:			Date/Tin	n a•	- lo	eceive	ed by												Date/	rima:				
and the control of th	company.			Date III					12	M	-					ompar	8	)			2/04	14	- 09	51	









5102 LaRoche Avenue

# Chain of Custody Record



Savannah, GA 31404

phone 912.354.7858 fax 912.352.0165					····	2-99	_						,						Т	'estAr	nerica	Labor	ratori	es, Inc.	
Client Contact	Project M	Ianager: Boi	b Billman			Site (	Contac	t: Mic	hael (	Corbe	tt					1///			C	COC N	0:				
URS Corporation	Tel/Fax:	(314) 743-41	and the second second second		_r	Lab (	Contac	t: Mi	chele l	Kerse	у		Car	rier:	Fee	IEX				1	_ of	1 (	COCs		
1001 Highlands Plaza Drive West, Suite 300		Analysis T	`urnaround	Time		-													- Contraction						
St. Louis, MO 63110		ar (C) or W				e de casa de c			75.4										1000						
(314) 429-0100 Phone	-	ΓΑΤ if different	from Below	Storda	rd Dr	and			by 3	75									L						
(314) 429-0462 FAX		] :	2 weeks			Distriction of the last of the		_	ate	7		100							S	SDG N	0.				
Project Name: 1Q14 LTM GW Sampling		] 1	l week			The state of the s		2	Sulf	RSK		by 6010C							A COLUMN						
Site: Solutia WG Krummrich Facility		]	2 days			9 B	. [	by 60	5.2/	es b	63	In b							Maran						
PO#		<u> </u>	l day		Name and the second	Sample 8260B	827	ج ا ا	33	Gas	353	Fe/	415.1			1 1									
Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Filtered Sample	SVOCs by 8270D*	Total Fe/Mn by 60100	Chloride by 325.2/Sulfate by 375.4	Dissolved (	Nitrate by 353,2 TOC by 415,1	Dissolved Fe/Mn	DOC by 4								Samp	le Speci	ific No	tes:	
BSA-MW-2D0214	2/4/14	1045	G	Water	16	3	2	1 1	1	3	2 3								-						
<b>BSA-MW-2D-</b> F(0.2)-0214		1045	G	Water	2	X						1	1				ľ							·	
BSA-MW-2D-0214-MS		1045	6	1	5	3	3 2																		
BSA-MW-2D-0214-MSD		1045	6		5	12	5 2	Ш																	
CPA-MW-3D-0214		1240	G		16	3	3 2	1	1 1	3	23	>			$oldsymbol{ol}}}}}}}}}}}}}}}}}}$										
CPA-MW-3D-F(0.2)-0214		1240	6		2	X						1	1												
CPA-MW-3D-0214-AD	1	1240	6	7	5	ا ا	3 2																		
								$\prod$																	
1Q14 LTM Trip Blank # <u>2</u>	2/4/14	/ _		Water	2	2	2		,																
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaC	0H; 6= Oth	er				2		4 ]			3,1 3		2		T							,			
Possible Hazard Identification						- 1	-	1 -			e ma	y be	asse	essea	if sa	mple	s are	e retai	ined lo	onger	than :	mont	h)		
Mon-Hazard Flammable Skin Irritant	son	: B	nown				$\Box R$	eturn	To CI	ient			ispo	sal B	y Lab			$A \square$	ive Fo	ır		_ Mon	ths		
Special Instructions/QC Requirements & Comments:								1																	
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Relinquished by: WIT	Company	: URS		Date/Tir 2/4//	ne: 4 <i>B 15</i>	00 R	ceived		4	2	· ·		Jc	) C	ompa	ay:	5		Ī		ne:	14	^	96	fb
Relinquished by:	Company	•		Date/Ti	ne:	R	eçeived	by:	Č	١.			_ >	-	ompa	*				Date/Tir				<u>.</u>	
Relinquished by:	Company	;	,	Date/Tir	ne:	R	ecei												I	Date/Tir	ne:				

680-98328 Chain of Custody

Page 33 of 35

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5102 LaRoche Avenue

Chain of Custody Record

TestAmerica

Savannah, GA 31404

TestAmerica Laboratories, Inc. phone 912,354,7858 fax 912,352,0165 Site Contact: Michael Corbett COC No: Client Contact Project Manager: Bob Billman COCs Tel/Fax: (314) 743-4108 Lab Contact: Michele Kersey Carrier: **URS** Corporation Analysis Turnaround Time 1001 Highlands Plaza Drive West, Suite 300 Calendar ( C ) or Work Days (W) St. Louis, MO 63110 Chloride by 325,2/Sulfate by 375.4 TAT if different from Below Standord Phone (314) 429-0100 Dissolved Fe/Mn by 6010C SDG No FAX 2 weeks (314) 429-0462 Project Name: 1Q14 LTM GW Sampling 1 week Alk/CO2 by 310.1 Site: Solutia WG Krummrich Facility 2 days VOCs by 8260B Nitrate by 353.2 PO# 1 day Sample Sample Sample Sample Specific Notes: Time Cont. Sample Identification Date Туре Matrix 211111230 2 3 BSA-MW-05D C Water 2 1230 G 2 Water F(0.2)-0214 323 1530 2 1530 <del>በያ</del>ሜ 32 0830 RECISED ID DON N. MENOHEN d.Roopeddon) 2/1/14 00:00 IQ14 LTM Trip Blank # 3 Water 4 1 1 2 3,1 3 4 2 Preservation Used: i= Ice, 2= HCl; 3# H2SO4; 4=HNO3; 5=N2OH; 6= Other Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month) Possible Hazard Identification  $\square$ nown Return To Client 開創isposal By Lab A ive For Non-Hazard \_\_\_\_ Flammable Skin Irritant \_\_\_son B Special Instructions/QC Requirements & Comments: 680-98461 6.6°C Date/Time: Date/Time; 2/7/14 /600 Received by: Company: Relinquished by a Company: (RS Received by: Company: Date/Time: Relinguished by: Company: Date/Time: Date/Time: Received by Relinquished by: Company: TA Sa 02/08/14















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5102 LaRoche Avenue Savannah, GA 31404

## **Chain of Custody Record**



phone 912.354.7858 fax 912.352.0165																					TestAmerica Labo	oratories, l	nc.
Client Contact		Ianager: Bob				Site	Cor	ıtact:	Mich	ael (	Corb	ett	0	MC;	ී		MA				COC No:		
URS Corporation	Tel/Fax:	(314) 743-410	08			Lab	Cor	atact:	Mich	iele l	Kerse	y	C	arrie	r:	Fe	dE	X_			of	COCs	
1001 Highlands Plaza Drive West, Suite 300		Analysis T	urnaround	Time															İΠ	$\Box$	•		
St. Louis, MO 63110		ar (C) or Wo				П			75.4											ı			
(314) 429-0100 Phone	_]	TAT if different f	rom Below _	Stand	art				3y 3	75			_							L			
(314) 429-0462 FAX	J ⊏	] 2	weeks					_	afe	K 1′			9								SDG No.		
Project Name: 1Q14 LTM GW Sampling		] 1	week			Н		을	325.2/Sulfate by 375.4	, RS			.y. 60							- 1			
Site: Solutia WG Krummrich Facility	] . $\sqsubset$	] :	2 days			او	m	S   5	5.2/	es by	2	ļ	<u>ا</u>							- [	•		
PO#		] :	l day			Sample	3260	رة ا 13 أ	y 32	Gas	353	415.1	d Fe/N	ď				İ		L			
Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Filtered St	VOCs by 8260B	Total Fe/Mn by 6010C	Chloride by	Dissolved Gases by RSK 175	Nitrate by 353.2	TOC by 4	Dissolved Fe/Min by 6010C	DOC By 4							Sample Spe	ecific Notes:	
GWE-5S-0214	2/10/17	11235	G	Water	14		3	1 1	1	3	2	3											
GWE-5S-F(0.2)-0214		1235	G	Water	2	X							1	1									
GWE-5M-0214	- Interest	1425	G	Water	14		3	1 1	1	3	2	3								T			
GWE-5M-F(0.2)-0214		1425	G	Water	2	X	T						1	1		_							
GWE-5D-0214		1555	G	Water	14		3	1 1	1	3	2	3				_							
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GWE 3D 0214				Water.	14		3	1-1	1	3	2	3				4		‡		_			_
GWE-3D-F(0.2)-0214		-	c_	Water		X	4	4	-	_			1	1									
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1Q14 LTM Trip Blank #	2/10/14			Water	. 2	П	2					$\dashv$	1			_		$\top$		$\top$			
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaC	<del>'/ /</del>	er		لــــــــــــــــــــــــــــــــــــــ		+	2	4 1	1	2	3.1	3	4 :	2	1	_	$\dashv$	+		十			
Possible Hazard Identification						1									esse	d if s	amp	les a	re re	tain	ned longer than 1 r	month)	
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant	ison	B	mown					Ret	urn T	o Cl	ient			Disp	osal	By La	ab		Ar	chiv	/e For	Months	
Special Instructions/QC Requirements & Comments:																				_			$\neg$
				_						A												2.0 100	)°C
Relinquished by:	Company	URS		Date/Tir	ne:	ا مرا	Kece	ved b	y: <b>C</b>	W	2	21	11	Sa	Com	pany	1				Date/Time:	100	8
Relinquished by:	Company			Date/Tir	ne:		Rese	ived b	y: (	7		<u>r</u> /C	M.	m	Com	pany	<u></u>			-	Date/Time:		<i>U</i>
Relinquished by:	Company	<del></del>		Date/Tir	ne:	$\dashv$	Rece	ived b	y:						Com	 ipany	:			$\dashv$	Date/Time:	_	
																			-				

680-98489 Chain of Custody

5102 LaRoche Avenue Savannah, GA 31404

# **Chain of Custody Record**



phone 912.534.7838 Tax 912.532.0103																					TestAmerica Laboratories, li	1C.
Client Contact			anager: Bol				Si	te Co	ontact	t: Mi	ichae	l Co	rbett		Dates		/00/			3000	COC No:	
URS Corporation	Tel/F	ax: (3	14) 743-410	08			La	b C	ontac	t: M	ichel	e Ke	rsey		Carrie		Fe		<			-
1001 Highlands Plaza Drive West, Suite 300			Analysis T	urnaround	Time		T	Π				Π.	T				Ť	1	Ì			
St. Louis, MO 63110	Ca	lendar	(C) or Wo	ork Days (W	)		7				375.4					1 1	İ			İ	21563600.000	01
(314) 429-0100 Phone		T.A	AT if different t	from Below	Stando	rd	7			-   3	y 37	,										•
(314) 429-0462 FAX			2	2 weeks							Chiloride by 325.2/Sulfate by Dissolved Goog by DSE 175		-	8	-		ŀ				SDG No.	
Project Name: 1Q14 LTM GW Sampling			1	week				İ	၁		n lin		1.	Dissolved Fe/Mn by 6010C	- 1		İ					
Site: Solutia WG Krummrich Facility				2 days				<u> </u>	Total Fe/Mn by 6010C	<u>-</u>   }	2/2/	3		l by								
PO#				l day			Ĭ	109	l b	310	325	53.2	;;	e/M	=			1				
					T		Š	VOCs by 8260B	W.	Alk/CO2 by 310.1	Chloride by	Nitrate by 353.2	TOC by 415.1	F D	DOC by 415.1						***	
	San	aple	Sample	Sample		#of	ered	Cs b	E E	္မွ ု	Dirig	ate	(F)	100	ر و			l				
Sample Identification	Da	ate	Time	Type	Matrix		蘆	ΛO	Tot	¥ S	5   2		5 E	Dis.	2						Sample Specific Notes:	
ESL-MW-A-0214	2/1	1)14	1500	· G	Water	14	Τ	3	1	$\neg$		3 2	3							T		
ESL-MW-A-F(0.2)-0214	de constant	<del>,</del>	1500	G	Water	2	x				T			1	1							
ESL-MW-C1-0214			1255	G	Water	14	T	3	1	1	1 3	3 2	3									
ESL-MW-C1-F(0.2)-0214		1	1255	G	Water	2	x			$\top$	$\dagger$			1	1		1	$\top$		+		
ESL MW-D1-0214 MC	<b></b>		13.3	G	Water	14	T	3	1	1	1 3	3 2	3		+	+	$\top$	$\dagger$		$\top$		
ESL MW D1 F(0.2) 0214 Me				G	Water	2	X			+	+	+	+	1	1		+	+	$\Box$	+		
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				G	Water	14	_	3	1	1	1 3	2	3									
	-			G	Water	2	X							1	1							
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1Q14 LTM Trip Blank # 5	2/11				Water			2		_	4	<u> </u>	4	_			_		$\sqcup$	$\dashv$		
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=Na	OH; 6=	Other	·						4						2							
Possible Hazard Identification	<u> </u>													nay i				-			ined longer than 1 month)	
Non-Hazard Flammable Skin Irritant		ison E	3 L	<u>known</u>					Re	turn	To	Clien	t		Disp	oosal l	By La	b .		Arch	nive For Months	
Special Instructions/QC Requirements & Comments:												_									2	Ži
Relinquished by:	Comp	any:	URS		Date/Tir	ne:	es)	Rec	zived Zved	by:	G	17	Sen.	1		Com	pany:	<u> </u>	•		Date/Time: /// //:1	7
Relinquished by:	Comp	any:			Date/Tir			Rec	lved	by:	0	<del>س</del>	<i>,,,,,</i>	C.	٣_	Com	pany:	-1			Date/Time:	<del></del>
Relinquished by:	Comp	any:			Date/Tir	ne:		Rece	eived	by:			-			Com	pany:				Date/Time:	
																			1166			l



# Page 31 of 33

#### Savannah

5102 LaRoche Avenue

#### Chain of Custody Record



Savannah, GA 31404 phone 912.354.7858 fax 912.352.0165 TestAmerica Laboratories, Inc. COC No: Site Contact: Michael Corbett Client Contact Project Manager: Bob Billman Tel/Fax: (314) 743-4108 Fed EX COCs Lab Contact: Michele Kersev **URS** Corporation Carrier: Analysis Turnaround Time 1001 Highlands Plaza Drive West, Suite 300 Calendar (C) or Work Days (W) Chloride by 325.2/Sulfate by 375.4 21563600, 20001 St. Louis, MO 63110 TAT if different from Below Phone (314) 429-0100 Dissolved Fe/Mn by 6010C SDG No (314) 429-0462 2 weeks Fotal Fe/Mn by 6010C Project Name: 1Q14 LTM GW Sampling 1 week Site: Solutia WG Krummrich Facility SVOCs by 8270D\* Alk/CO2 by 310.1 2 days PO# 1 day DOC by Sample Sample Sample Sample Identification Date Matrix Cont. Sample Specific Notes: CAR-MW - 2D 1510 Water 16 2 1570 2 CPA-MW-2D G Water 1 F(0.2)-0214 2 6 3 CPA-MW- 2D-0214-AD 5 1516 14 ESL-MW-D2-0214 32 1105 ESL-MW-D1-F(0.2)-0714 1105 Water 1Q14 LTM Trip Blank # Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other 4 1 1 2 3,1 3 4 2 Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month) Possible Hazard Identification ☐ Non-Hazard Skin Irritant Tnown Return To Client isposal By Lab A live For ☐ Flammable son B Special Instructions/OC Requirements & Comments: Date/Time: Relinquished by Company: URS Date/Time: Relinquished by: Company: Date/Time: Date/Time: Relinquished by: Company: Received by: Company:

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# Page 30 of 32

#### Savannah

5102 LaRoche Avenue

### Chain of Custody Record



Savannah, GA 31404 TestAmerica Laboratories, Inc. phone 912.354.7858 fax 912.352.0165 Site Contact: Michael Corbett Project Manager: Bob Billman Client Contact Lab Contact: Michele Kersey Carrier: Tel/Fax: (314) 743-4108 **URS** Corporation 1001 Highlands Plaza Drive West, Suite 300 Analysis Turnaround Time 21563600.00001 Calendar (C) or Work Days (W) 325.2/Sulfate by 375.4 St. Louis, MO 63110 TAT if different from Below (314) 429-0100 Dissolved Fe/Mn by 6010C SDG No 2 weeks (314) 429-0462 FAX Fotal Fe/Mn by 6010C Project Name: 1Q14 LTM GW Sampling 1 week Site: Solutia WG Krummrich Facility 2 days VOCs by 8260B PO# 1 day Sample Sample Sample # of Matrix Cont. Sample Specific Notes: Type Sample Identification 1515 એ13/14 Water BSA-MW-01S -0214 1515 Water 2 BSA-MW-015-F(0.2)-0214 G 1 5 BSA-MW-015-0214- EB 3 1345 Water 1Q14 LTM Trip Blank # 7 2 1 4 1 1 2 3,1 3 4 2 Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month) Possible Hazard Identification A∭ive For Return To Client isposal By Lab ☐ Non-Hazard ☐ Flammable nown Special Instructions/QC Requirements & Comments: 680-98624 Date/Time: 2/13/14 1630 Company: Received by: Company: Relinquished by URS Date/Time: Company: Date/Time: Received by: Company: Relinquished by: Date/Time: Company: Date/Time: Received by: Relinquished by: 74 80V 1007

5102 LaRoche Avenue

# Chain of Custody Record



Savannah, GA 31404

phone 912.354.7858 fax 912.352.0165					,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,							-								TestAmerica Laboratories, Inc.
Client Contact	Project Ma	nager: Bob	Billman			Site	Cont	act: l	Mich	ael C	orbei	tt								COC No:
URS Corporation	Tel/Fax: (3	14) 743-410	08			Lab	Cont	act: I	Mich	iele K	Cersey	/		Car	rier:	Fe	dE.	<del>}</del>		of COCs
1001 Highlands Plaza Drive West, Suite 300		Anafysis T	urnaround	Time				T	Π											_
St. Louis, MO 63110	Calendar	(C) or Wo	ork Days (W			edenigraphy principalist				Chloride by 325.2/Sulfate by 375.4										21563600.0000/
(314) 429-0100 Phone	TA	T if different f	rom Below	Stow	dad	accumpts accumpts	-		İ	33	32									
(314) 429-0462 FAX		2	weeks			oresis territories				l et	RSK 175	ļ	190							SDG No.
(314) 429-0462 FAX Project Name: 1Q14 LTM GW Sampling		1	week			acutrado	-	130		1	S2		99							
Site: Solutia WG Krummrich Facility		:	2 days			0	<u>,</u>  *	[3	12	5.2/6	<u>\$</u>	.   -	l d	l						
PO#			l day			Hiltered Sample	VOCs by 8260B SVOCs by 8270D*	Total Fe/Mn by 6010C	/ 310.1	32	Dissolved Gases	TOC by 415.1	Dissolved Fe/Mn by 6010C	5.1						
						Sa	y 8	e M	Alk/CO2 by	le by	g   4	TOC by 415.1	ed F	DOC by 415.1						
	Sample	Sample	Sample		# of	Filtered 5	္ ၂ ဗိ	18	15	orid	Soly a	o p	100	Cp						
Sample Identification	Date	Time	Туре	Matrix		E S	S S	Tot	¥  ¥	5	Dis	100	Dis	8		<u> </u>				Sample Specific Notes:
CPA-MW-1D -0214	2/14/14	1120	G	Water	16		3 2	1	1	1	3 2	2 3					680	=		
CPA-MW-1)-F(0.2)-0214	2/14/14	1120	G	Water	2	х							1	1			98			,
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Relinquished by:

#### Savannah

5102 LaRoche Avenue

### **Chain of Custody Record**

<u>TestAmerica</u>

Savannah, GA 31404 phone 912.354.7858 fax 912.352.0165 TestAmerica Laboratories, Inc. Client Contact Project Manager: Bob Billman Date 2/**4**/4 Carrier: **'Fed E**X Site Contact: Michael Corbett COC No: **URS** Corporation Tel/Fax: (314) 743-4108 Lab Contact: Michele Kersev COCs 1001 Highlands Plaza Drive West, Suite 300 Analysis Turnaround Time 21563600.00001 St. Louis, MO 63110 Calendar (C) or Work Days (W) Chloride by 325.2/Sulfate by 375.4 (314) 429-0100 Phone TAT if different from Below Standard SDG No. (314) 429-0462 FAX 2 weeks Dissolved Fe/Mn by 6010C Project Name: 1Q14 Route & GW Sampling LTM 1 week Site: Solutia WG Krummrich Facility 2 days P O # 1 day Sample Sample Sample #of Sample Identification Date Type Matrix Cont. Sample Specific Notes: 1225 G Water -0214 GWE-3D 1225 Water 2 -F(0.2)-0214 2/8/14 Trio Blank #9 Water Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other Possible Hazard Identification Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month) ☐ Flammable Unknown Skin Irritant  $\Box_{I \text{ oison } B}$ Disposal By Lab Archive For Return To Client Special Instructions/QC Requirements & Comments: Relinquished by: Company: 2/18/14 1630 URS Relinquished by: Company: Date/Time:

Date/Time:

Company:



Received by:







Company:



Date/Time:

Relinquished by:

Relinquished by:

#### Savannah

5102 LaRoche Avenue

## Chain of Custody Record



Savannah, GA 31404

phone 912,354,7858 fax 912,352,0165 TestAmerica Laboratories, Inc. COC No: Project Manager: Bob Billman Site Contact: Michael Corbett Client Contact Carrier: Fed Ex COCs **URS** Corporation Tel/Fax: (314) 743-4108 Lab Contact: Michele Kersev 1001 Highlands Plaza Drive West, Suite 300 **Analysis Turnaround Time** 21563600.00001 St. Louis, MO 63110 Calendar (C) or Work Days (W) Chloride by 325,2/Sulfate by 375.4 TAT if different from Below (314) 429-0100 Phone Dissolved Gases by RSK 175 Dissolved FeMin by 6010C (314) 429-0462 FAX 2 weeks Total Fe/Mn by 6010C Project Name: 1Q14 LTM GW Sampling 1 week Site: Solutia WG Krummrich Facility 2 days PO# 1 day DOC by 415.1 Sample Sample Sample Sample Identification Date Time Type Matrix Cont. Sample Specific Notes: CPA-MW-4D-0214 16 2 1 3 2/20/14 3 1230 G Water CPA-MW-4D+(0.2)-0214 1230 G Water 2 2/20/14 1Q14 LTM Trip Blank #\_10 Water 2 2 1 4 1 1 1 3,1 3 4 2 Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month) Possible Hazard Identification Return To Client A\_\_\_ive For isposal By Lab ☐ Non-Hazard \_\_\_ Flammable Skin Irritant son B \_\_nown Special Instructions/QC Requirements & Comments: 600-93831 7.400 Received by: Company: Date/Time: Relinquished by: Company: URS



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# Appendix C Quality Assurance Report

#### QUALITY ASSURANCE REPORT

Solutia Inc. W.G. Krummrich Facility Sauget, Illinois

# Long-Term Monitoring Program 1<sup>st</sup> Quarter 2014 Data Report

Prepared for

Solutia Inc. 575 Maryville Centre Drive St. Louis, MO 63141

May 2014



URS Corporation 1001 Highland Plaza Drive West, Suite 300 St. Louis, MO 63110 (314) 429-0100

Project # 21563600

#### **1Q14 QUALITY ASSURANCE REPORT**

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#### 1.0 INTRODUCTION

This Quality Assurance Report presents the findings of a review of analytical data for groundwater samples collected in February of 2014 at the Solutia W.G. Krummrich plant as part of the 1<sup>st</sup> Quarter 2014 Long-Term Monitoring Program (LTMP). The samples were collected by URS Corporation personnel and analyzed by TestAmerica Laboratories, Inc., located in Savannah, Georgia, using USEPA methods, standard methods, and USEPA SW-846 methodologies. Groundwater samples were tested for volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), total and dissolved metals, dissolved gasses, and general chemistry parameters.

One hundred percent of the data were subjected to a Level III data quality review. The Level III data reviews were performed in order to confirm that the analytical data provided by TestAmerica Savannah were acceptable in quality for their intended use.

A total of twenty-one groundwater samples (seventeen investigative samples, two field duplicate pair, and one MS/MSD pair) were prepared and analyzed by TestAmerica Savannah for combinations of VOCs, SVOCs, dissolved gases, metals, and general chemistry. Additionally, two equipment blanks were collected and analyzed by TestAmerica. Ten trip blank sets were included in the coolers that contained groundwater VOC samples and were analyzed for VOCs by USEPA SW-846 Method 8260B. These samples were analyzed as ten sample delivery groups (SDGs) KPS106 through KPS115, utilizing the following USEPA SW-846 Methods:

- Method 8260B for VOCs (Benzene, Chlorobenzene, 1,2-Dichlorobenzene, 1,3-Dichlorobenzene, and 1,4-Dichlorobenzene)
- Method 8270D for SVOCs (4-Choloraniline, 2-Chlorophenol, 1,2,4-Trichlorobenzene, and 1,4-Dioxane)
- Method 6010C for total and dissolved iron and manganese

Samples were also analyzed for MNA parameters by the following methods:

- Method RSK-175 for Dissolved Gasses (Ethane, Ethylene, and Methane)
- USEPA Method 310.1 for Alkalinity and Free Carbon Dioxide
- USEPA Method 325.2 for Chloride
- USEPA Method 353.2 for Nitrogen, Nitrate
- USEPA Method 375.4 for Sulfate
- USEPA Method 415.1 for Total and Dissolved Organic Carbon

Samples were reviewed following procedures outlined in the USEPA Contract Laboratory Program



National Functional Guidelines for Superfund Organic Methods Data Review (USEPA 2008), USEPA Contract Laboratory Program National Functional Guidelines for Superfund Inorganic Data Review (USEPA 2010), and the Revised LTMP Work Plan (Solutia 2009).

The above guidelines provided the data review criteria. Additional quantitative criteria are given in the analytical methods. Qualifiers assigned by the data reviewer have been applied to the laboratory report. The qualifiers indicate data that did not meet acceptance criteria and corrective actions were not successful or not performed. The various qualifiers are explained in **Tables 1** and **2** below.

**TABLE 1 Laboratory Data Qualifiers** 

Lab Qualifier	Definition
U	Analyte was not detected at or above the reporting limit.
*	LCS, LCSD, MS, MSD, MD, or surrogate exceeds the control limits.
E	Result exceeded the calibration range, secondary dilution required.
	Surrogate or matrix spike recoveries were not obtained because the extract was
D	diluted for analysis; also compounds analyzed at a dilution will be flagged with a
	D.
J	Result is less than the RL but greater than or equal to the MDL and the
J	concentration is an approximate value.
Х	Spike recovery exceeds upper or lower control limits.
F	MS, MSD, or RPD exceeds upper or lower control limits.
Р	The difference between the results of the two GC columns is greater than 40%
Н	Sample was prepped or analyzed beyond the specified holding time.
В	Compound was found in the blank and sample.
4	MS, MSD: The analyte present in the original sample is 4 times greater than the
4	matrix spike concentration; therefore, control limits are not applicable.
^	ICV, CCV, ICB, CCB, ISA, ISB, CRI, CRA, DLCK, or MRL standard: Instrument
	related QC exceeds the control limits.



#### **TABLE 2 URS Data Qualifiers**

	Definition
U	The analyte was analyzed for but was not detected.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
υJ	The analyte was not detected above the reported sample quantitation limit.  However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

Based on the criteria outlined, it is recommended that the results reported for these analyses are accepted for their intended use. Acceptable levels of accuracy, precision, and representativeness (based on MS/MSD, LCS, surrogate compounds and field duplicate results) were achieved for this data set, except where noted in this report.

The data review included evaluation of the following criteria:

#### **Organics**

- Receipt condition and sample holding times
- Laboratory method blanks, field equipment blanks, and trip blank samples
- Surrogate spike recoveries
- Laboratory control sample (LCS) recoveries
- Matrix spike/matrix spike duplicate (MS/MSD) sample recoveries and relative percent difference (RPD) values
- Field duplicate results
- Results reported from dilutions
- Internal standard (IS) recoveries

#### **Inorganics/General chemistry**

- Receipt condition and sample holding times
- Laboratory method blank and field equipment blank samples
- LCS recoveries



- MS/MSD sample recoveries and matrix duplicate RPD values
- Field duplicate and laboratory duplicate results
- Results reported from dilutions

The following sections present the results of the data review.

#### 2.0 RECEIPT CONDITION AND SAMPLE HOLDING TIMES

Sample holding time requirements for the analyses performed are presented in the methods and/or in the data review guidelines. Review of the sample collection, extraction, and analysis dates involved comparing the chain-of-custody (COC) and the laboratory data summary forms for accuracy, consistency, and holding time compliance.

The cooler receipt forms for SDGs KPS107, KPS108, KPS112, KPS113, and KPS114 indicated that coolers were received by the laboratory at temperatures below the  $4^{\circ}$ C  $\pm$   $2^{\circ}$ C criteria. The samples were received in good condition; therefore no qualification of data was required.

The receipt forms for SDGs KPS107, KPS108, KPS109, KPS112, and KPS113 indicated pH > 2 for dissolved organic carbon in several samples; please see Section 10.0 of this report for qualifications.

Additionally, the equipment blank, BSA-MW-5D-0214-EB, was inadvertently labeled incorrectly on the COC and on sample ID labels. URS contacted the laboratory; no qualification of data was required. The laboratory report for SDG KPS109 was revised and re-issued on March 7, 2014 to include the case narrative which had not been included with the original report. In SDG KPS1111, the cooler receipt form indicated that the laboratory report was revised and re-issued on March 13, 2014 to correct a laboratory transcription error for sample ID ESL-MW-D1-0214, and to flag samples CPA-MW-2D-F(0.2)-0214 and ESL-MW-D1-F(0.2)-0214 outside holding time criteria for dissolved organic carbon analysis.

Samples CPA-MW-2D-F(0.2)-0214 and ESL-MW-D1-F(0.2)-0214 were field filtered; however, these samples were laboratory preserved and analyzed for dissolved organic carbon approximately two days outside the two hour hold time for preservation. Analytical data that required qualification based on holding time criteria are included in the table below.

Sample ID	Parameter	Analyte	Qualification
CPA-MW-2D-F(0.2)-0214	General chemistry	Dissolved organic carbon	J
ESL-MW-D1-F(0.2)-0214	General chemistry	Dissolved organic carbon	J

Samples BSA-MW-1S-0214, CPA-MW-1D-0214, and equipment blank BSA-MW-1S-0214-EB were re-extracted for SVOCs three days outside the seven day hold time for extraction due to



LCS recoveries outside evaluation criteria. SVOC data from the original extraction and analysis was used to qualify data. No further qualification of data was required.

#### 3.0 TRIP BLANKS, LABORATORY METHOD BLANK AND EQUIPMENT BLANK SAMPLES

Trip blank samples are used to assess VOC cross contamination of samples during shipment to the laboratory. Trip blanks were submitted with each cooler shipped containing VOC samples for a total of six trip blank sample sets. Trip blank results were non-detect.

Laboratory method blank samples evaluate the existence and magnitude of contamination problems resulting from laboratory activities. Laboratory method blank samples were analyzed at the method prescribed frequencies. Method blank results were non-detect.

Equipment blank samples are used to assess the effectiveness of equipment decontamination procedures. The equipment blank results were non-detect, except as summarized in the table below.

Blank ID	Parameter	Analyte	Concentration/Amount
BSA-MW-1S-0214-EB	VOCs	Chlorobenzene	3.2 ug/L
BSA-MW-1S-0214-EB	VOCs	1,4-Dichlorobenzene	3.4 ug/L

Analytical data that were reported non-detect or at concentrations greater than five times (5X) the associated blank concentration did not required qualification. No qualification of data was required.

#### 4.0 SURROGATE SPIKE RECOVERIES

Surrogate compounds are used to evaluate overall laboratory performance for sample preparation efficiency on a per sample basis. VOC samples were spiked with surrogate compounds during sample preparation. USEPA National Functional Guidelines for Superfund Organic Methods Data Review state how data is qualified, if surrogate spike recoveries do not meet acceptance criteria. Surrogate spike recoveries were within evaluation criteria, except as summarized in the table below.

Sample ID	Parameter	Surrogate	Recovery	Criteria
BSA-MW-1S-0214 Run#2	SVOCs	2-Fluorobiphenyl	37	38-130

SVOC data from the original extraction and analysis was used to qualify data. No qualification of SVOC data was required based on surrogate recoveries outside evaluation criteria. Additionally, surrogates were diluted out and not recovered in SVOC analysis of field duplicate pair CPA-MW-2D-0214/CPA-MW-2D-0214-AD. No qualification of data is required.



#### 5.0 LABORATORY CONTROL SAMPLE RECOVERIES

Groundwater LCSs were analyzed with each analytical batch to assess the accuracy of the analytical process. LCS recoveries were within evaluation criteria, except as summarized in the table below.

LCS/LCSD ID	Parameter	Analyte	LCS/LCSD Recovery	RPD	LCS/LCSD/ RPD Criteria
680-315441/5/6	General chemistry	Methane	77 <b>/</b> 106	32	75-125/30
680-315638/7/8-A	SVOCs	4-Chloroaniline	14/12	14	42-130/50
680-315033/14	General chemistry	Nitrate	111	NA	90-110
680-315374/14	General chemistry	Nitrate	111	NA	90-110
680-315170/14	General chemistry	Nitrate	111	NA	90-110
680-316409/5/6-A	SVOCs	4-Chloroaniline	<b>4</b> /60	173	42-130/50
680-315764/14	General chemistry	Nitrate	113	NA	90-110
680-316042/14	General chemistry	Nitrate	112	NA	90-110

Analytical data that required qualification based on LCS data are included in the table below. The compound 4-chloroaniline is not reported for the associated samples. Analytical data reported as non-detect and associated with LCS recoveries above evaluation criteria, indicating a possible high bias, did not require qualification.

Sample ID	Parameter	Analyte	Qualification
GWE-5S-0214	General chemistry	Nitrate	J
ESL-MW-A-0214	General chemistry	Nitrate	J

#### 6.0 MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD) SAMPLES

MS/MSD samples are analyzed to assess the accuracy and precision of the analytical process on an analytical sample in a particular matrix. MS/MSD samples were collected at a frequency of one per 20 investigative samples, in accordance with the work plan. URS Corporation submitted one MS/MSD sample set for 20 investigative samples, which met the work plan frequency requirement. The laboratory spiked and analyzed groundwater sample BSA-MW-2D-0214 for VOCs, SVOCs, metals, and nitrate. Although not requested for MS/MSD analyses, the laboratory spiked groundwater samples CPA-MW-5D-F(0.2)-0214, CPA-MW-3D-0214, BSA-MW-2D-F(0.2)-0214, BSA-MW-4D-0214, BSA-MW-4D-0214, GWE-5S-0214, GWE-5S-F(0.2)-0214, CPA-MW-2D-0214, GWE-3D-F(0.2)-0214, and CPA-MW-4D-0214 for various parameters as discussed further in the data review in **Appendix D**.

USEPA National Functional Guidelines for Organic Data Review indicates that organic data does not require qualification based on MS/MSD data alone. Therefore, if recoveries were outside



evaluation criteria due to matrix interference or abundance of analytes, no qualifiers were assigned unless these analytes had other quality control criteria outside evaluation criteria. MS/MSD recoveries outside evaluation criteria are summarized in the table below.

Groundwater samples spiked and analyzed as MS/MSDs and their respective recoveries were within evaluation criteria with the exceptions summarized in the following table.

MS/MSD ID	Parameter	Analyte	MS/MSD Recovery	RPD	MS/MSD/ RPD Criteria
BSA-MW-2D-0214	VOCs	Benzene	24/34	6	74-123/30
BSA-MW-2D-0214	SVOCs	4-Chloroaniline	26/19	13	42-130/50
BSA-MW-2D-0214	General chemistry	Nitrate	110/ <b>111</b>	0	90-110/10
BSA-MW-5D-0214	General chemistry	Nitrate	110/ <b>111</b>	0	90-110/10
CPA-MW-2D-0214	General chemistry	Chloride	80/81	0	85-115/30

Analytical data that required qualification based on MS/MSD data are included in the table below. USEPA National Functional Guidelines for Organic Data Review indicates that organic data does not require qualification based on MS/MSD data alone. Analytical data reported as non-detect and associated with MS/MSD recoveries above evaluation criteria, indicating a possible high bias, did not require qualification.

Sample ID	Parameter	Analyte	Qualification
CPA-MW-2D-0214	General chemistry	Chloride	J

#### 7.0 FIELD DUPLICATE RESULTS

Field duplicate results are used to evaluate precision of the entire data collection activity, including sampling, analysis, and site heterogeneity. When results for both duplicate and sample values are greater than five times the practical quantitation limit (PQL), satisfactory precision is indicated by an RPD less than or equal to 25 percent for aqueous samples. Where one or both of the results of a field duplicate pair are reported at less than five times the PQL, satisfactory precision is indicated if the field duplicate results agree within two times the quantitation limit. Field duplicate results that do not meet these criteria may indicate unsatisfactory precision of the results.

Two pairs of field duplicate samples were collected for the seventeen investigative groundwater samples. This satisfies the requirement in the work plan (one per ten investigative samples or ten percent). Groundwater field duplicate RPDs were within evaluation criteria. No qualification of data was required.

#### 8.0 INTERNAL STANDARD RESPONSES



Internal standard (IS) performance criteria ensure that the GC/MS sensitivity and response are stable during each analytical run. IS areas must be within -50 percent to +100 percent for VOCs. The internal standards area responses for VOCs were verified for the data review. VOC IS responses met the criteria as described above for groundwater samples with the exceptions summarized in the following table.

Sample ID	Parameter	Analyte	IS Area Recovery	IS Criteria
BSA-MW-4D-0214	SVOCs	Perylene-d <sub>12</sub>	779036	1352113-5408452
1Q14 LTM Trip Blank #7	VOCs	1,2-Dichloroethane-d4	60712	148828-595310
1Q14 LTM Trip Blank #7	VOCs	1,4-Difluorobenzene	129756	336021-1344082
1Q14 LTM Trip Blank #7	VOCs	Chlorobenzene-d₅	75927	183087-732346

Sample BSA-MW-4D-0214 did not have analytical data associated with internal standard perylene-d<sub>12</sub>. Sample 1Q14 LTM Trip Blank #7 is a quality control sample and is not qualified. No qualification of data was required.

#### 9.0 RESULTS REPORTED FROM DILUTIONS

VOC, SVOC, chloride, sulfate, and dissolved organic carbon results for groundwater samples were diluted due to high levels of target analytes. The diluted sample results for these analytes were reported for the associated samples.

#### 10.0 ADDITIONAL QUALIFICATIONS

The following samples are qualified, as summarized below, due to pH > 2.

Sample ID	Parameter	Analyte	Qualification
CPA-MW-3D-F(0.2)-0214	General chemistry	Dissolved organic carbon	J
BSA-MW-5D-F(0.2)-0214	General chemistry	Dissolved organic carbon	J
BSA-MW-4D-F(0.2)-0214	General chemistry	Dissolved organic carbon	J
GWE-5S-F(0.2)-0214	General chemistry	Dissolved organic carbon	J
BSA-MW-1S-F(0.2)-0214	General chemistry	Dissolved organic carbon	J
CPA-MW-1D-F(0.2)-0214	General chemistry	Dissolved organic carbon	J

Additionally, the following samples are qualified, as summarized below, due to instrument calibration outside evaluation criteria for nitrate.

Sample ID	Parameter	Analyte	Qualification
BSA-MW-5D-0214	General chemistry	Nitrate	UJ
BSA-MW-4D-0214	General chemistry	Nitrate	UJ
GWE-5M-0214	General chemistry	Nitrate	UJ
GWE-5D-0214	General chemistry	Nitrate	UJ
ESL-MW-C1-0214	General chemistry	Nitrate	UJ
BSA-MW-1S-0214	General chemistry	Nitrate	UJ



Sample ID	Parameter	Analyte	Qualification
CPA-MW-1D-0214	General chemistry	Nitrate	UJ
CPA-MW-4D-0214	General chemistry	Nitrate	UJ

Analytical data requiring qualification based on dissolved organic carbon results greater than total organic carbon results in samples CPA-MW-1D-F(0.2)-0214/CPA-MW-1D-0214, respectively, are included in the table below. Dissolved organic carbon results in sample CPA-MW-1D-F(0.2)-0214 were previously qualified due to pH > 2, no further qualification was required.

Sample ID	Parameter	Analyte	Qualification
CPA-MW-1D-0214	General chemistry	Total organic carbon	J



# Appendix D Groundwater Analytical Results (with Data Review Reports)

# Solutia Krummrich Data Review WGK LTM 1Q14

**Laboratory SDG: KPS106** 

Data Reviewer: Elizabeth Kunkel

Peer Reviewer: Steve Gragert

Date Reviewed: 2/28/2014

Guidance: USEPA National Functional Guidelines for Superfund Organic Methods Data Review 2008. USEPA National Functional Guidelines for Superfund

**Inorganic Data Review 2010** 

Work Plan: Revised Long-Term Monitoring Program (LTMP) Work Plan (Solutia

2009)

Sample Identification			
CPA-MW-5D-0214	CPA-MW-5D-F(0.2)-0214		
BSA-MW-3D-0214	BSA-MW-3D-F(0.2)-0214		
1Q14 LTM Trip Blank #1			

#### 1.0 Data Package Completeness

Were all items delivered as specified in the QAPP and COC as appropriate?

Yes

#### 2.0 Laboratory Case Narrative \ Cooler Receipt Form

Were problems noted in the laboratory case narrative or cooler receipt form?

Yes, the laboratory case narrative indicated samples CPA-MW-5D-0214 and BSA-MW-3D-0214 were diluted due to high levels of VOCs, chloride, and sulfate. The LCS/LCSD RPD for methane was outside evaluation criteria. These issues are discussed further in the appropriate sections below.

No problems were indicated in the cooler receipt form.

#### 3.0 Holding Times

Were samples extracted/analyzed within applicable limits?

Yes

#### 4.0 Blank Contamination

Were any analytes detected in the Method Blanks, Field Blanks or Trip Blanks?

No

#### 5.0 Laboratory Control Sample

Were LCS recoveries within evaluation criteria?

No

LCS/LCSD ID	Parameter	Analyte	LCS/LCSD Recovery	LCS/LCSD RPD	LCS/LCSD Criteria
680-315441/5/6	General chemistry	Methane	77 <b>/</b> 106	32	75-125/30

Analytical data associated with RPD alone outside evaluation criteria, does not require qualification. No qualification of data was required.

#### 6.0 Surrogate Recoveries

Were surrogate recoveries within evaluation criteria?

Yes

#### 7.0 Matrix Spike and Matrix Spike Duplicate Recoveries

Were MS/MSD samples collected as part of this SDG?

Although not requested, sample CPA-MW-5D-F(0.2)-0214 was spiked and analyzed for dissolved organic carbon.

Were MS/MSD recoveries within evaluation criteria?

Yes

#### 8.0 Internal Standard (IS) Recoveries

Were internal standard area recoveries within evaluation criteria?

Yes

#### 9.0 Laboratory Duplicate Results

Were laboratory duplicate samples collected as part of this SDG?

No

#### 10.0 Field Duplicate Results

Were field duplicate samples collected as part of this SDG?

No

#### 10.0 Sample Dilutions

For samples that were diluted and nondetect, were undiluted results also reported?

Not applicable; analytes were detected in samples that were diluted.

#### 11.0 Additional Qualifications

Were additional qualifications applied?

No

## **SDG KPS106**

Results of Samples from Monitoring Wells:

BSA-MW-3D CPA-MW-5D

# Links Review your project results through Have a Question? Ask. expert Visit us at: www.testamericainc.com

# **TestAmerica**

THE LEADER IN ENVIRONMENTAL TESTING

# **ANALYTICAL REPORT**

TestAmerica Laboratories, Inc. TestAmerica Savannah 5102 LaRoche Avenue Savannah, GA 31404 Tel: (912)354-7858

TestAmerica Job ID: 680-98280-1

TestAmerica Sample Delivery Group: KPS106

Client Project/Site: WGK Long Term Monitoring - 1Q14

For:

Solutia Inc.

575 Maryville Centre Dr. Saint Louis, Missouri 63141

Attn: Mr. Jerry Rinaldi

Michael RKusey

Authorized for release by: 2/19/2014 3:54:02 PM

Michele Kersey, Project Manager I (912)354-7858

michele.kersey@testamericainc.com

Reviewed

FEB 28 2014

EXK

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

#### SDG: KPS106

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#### **Case Narrative**

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98280-1

SDG: KPS106

Job ID: 680-98280-1

Laboratory: TestAmerica Savannah

Narrative

#### **CASE NARRATIVE**

Client: Solutia Inc.

Project: WGK Long Term Monitoring - 1Q14

Report Number: 680-98280-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In the event of interference or analytes present at high concentrations, samples may be diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

#### RECEIPT

The samples were received on 2/4/2014 9:51 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.4° C.

#### **VOLATILE ORGANIC COMPOUNDS (GC-MS)**

Samples CPA-MW-5D-0214 (680-98280-1), BSA-MW-3D-0214 (680-98280-3) and 1Q14 LTM Trip Blank #1 (680-98280-5) were analyzed for Volatile Organic Compounds (GC-MS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 02/05/2014.

Samples CPA-MW-5D-0214 (680-98280-1)[20X] and BSA-MW-3D-0214 (680-98280-3)[50X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No difficulties were encountered during the volatiles analysis.

All quality control parameters were within the acceptance limits.

#### SEMIVOLATILE ORGANIC COMPOUNDS (AQUEOUS)

Samples CPA-MW-5D-0214 (680-98280-1) and BSA-MW-3D-0214 (680-98280-3) were analyzed for Semivolatile Organic Compounds (Aqueous) in accordance with EPA SW-846 Method 8270D. The samples were prepared on 02/06/2014 and analyzed on 02/07/2014.

No difficulties were encountered during the semivolatiles analysis.

All quality control parameters were within the acceptance limits.

#### **DISSOLVED GASES**

Samples CPA-MW-5D-0214 (680-98280-1) and BSA-MW-3D-0214 (680-98280-3) were analyzed for dissolved gases in accordance with RSK-175. The samples were analyzed on 02/13/2014.

Methane (TCD) exceeded the RPD limit for LCSD 680-315441/6. Refer to the QC report for details.

No other difficulties were encountered during the dissolved gases analysis.

All other quality control parameters were within the acceptance limits.

#### METALS (ICP)

Samples CPA-MW-5D-F(0.2)-0214 (680-98280-2) and BSA-MW-3D-F(0.2)-0214 (680-98280-4) were analyzed for Metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared on 02/04/2014 and analyzed on 02/05/2014.

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TestAmerica Savannah

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#### **Case Narrative**

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98280-1

SDG: KPS106

Job ID: 680-98280-1 (Continued)

Laboratory: TestAmerica Savannah (Continued)

No difficulties were encountered during the metals analysis.

All quality control parameters were within the acceptance limits.

#### METALS (ICP)

Samples CPA-MW-5D-0214 (680-98280-1) and BSA-MW-3D-0214 (680-98280-3) were analyzed for Metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared on 02/04/2014 and analyzed on 02/05/2014.

No difficulties were encountered during the metals analysis.

All quality control parameters were within the acceptance limits.

#### **ALKALINITY**

Samples CPA-MW-5D-0214 (680-98280-1) and BSA-MW-3D-0214 (680-98280-3) were analyzed for alkalinity in accordance with EPA Method 310.1. The samples were analyzed on 02/07/2014.

No difficulties were encountered during the alkalinity analysis.

All quality control parameters were within the acceptance limits.

#### CHLORIDE

Samples CPA-MW-5D-0214 (680-98280-1) and BSA-MW-3D-0214 (680-98280-3) were analyzed for Chloride in accordance with EPA Method 325.2. The samples were analyzed on 02/06/2014.

Samples CPA-MW-5D-0214 (680-98280-1)[10X] and BSA-MW-3D-0214 (680-98280-3)[5X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No difficulties were encountered during the chloride analysis.

All quality control parameters were within the acceptance limits.

#### NITRATE-NITRITE AS NITROGEN

Samples CPA-MW-5D-0214 (680-98280-1) and BSA-MW-3D-0214 (680-98280-3) were analyzed for nitrate-nitrite as nitrogen in accordance with EPA Method 353.2. The samples were analyzed on 02/04/2014.

No difficulties were encountered during the nitrate-nitrite analysis.

All quality control parameters were within the acceptance limits.

#### SULFATE

Samples CPA-MW-5D-0214 (680-98280-1) and BSA-MW-3D-0214 (680-98280-3) were analyzed for sulfate in accordance with EPA Method 375.4. The samples were analyzed on 02/06/2014.

Samples CPA-MW-5D-0214 (680-98280-1)[5X] and BSA-MW-3D-0214 (680-98280-3)[2X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No difficulties were encountered during the sulfate analysis.

All quality control parameters were within the acceptance limits.

#### TOTAL ORGANIC CARBON

Samples CPA-MW-5D-0214 (680-98280-1) and BSA-MW-3D-0214 (680-98280-3) were analyzed for total organic carbon in accordance with EPA Method 415.1. The samples were analyzed on 02/04/2014.

No difficulties were encountered during the TOC analysis.

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TestAmerica Savannah

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98280-1

SDG: KPS106

Job ID: 680-98280-1 (Continued)

Laboratory: TestAmerica Savannah (Continued)

All quality control parameters were within the acceptance limits.

#### **DISSOLVED ORGANIC CARBON (DOC)**

Samples CPA-MW-5D-F(0.2)-0214 (680-98280-2) and BSA-MW-3D-F(0.2)-0214 (680-98280-4) were analyzed for Dissolved Organic Carbon (DOC) in accordance with EPA Method 415.1. The samples were analyzed on 02/04/2014.

No difficulties were encountered during the DOC analysis.

All quality control parameters were within the acceptance limits.

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# Sample Summary

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98280-1

SDG: KPS106

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-98280-1	CPA-MW-5D-0214	Water	02/03/14 12:30	02/04/14 09:51
680-98280-2	CPA-MW-5D-F(0.2)-0214	Water	02/03/14 12:30	02/04/14 09:51
680-98280-3	8SA-MW-3D-0214	Water	02/03/14 15:05	02/04/14 09:51
680-98280-4	BSA-MW-3D-F(0.2)-0214	Water	02/03/14 15:05	02/04/14 09:51
680-98280-5	1Q14 LTM Trip Blank #1	Water	02/03/14 00:00	02/04/14 09:51









# **Method Summary**

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98280-1

SDG: KPS106

Method	Method Description	Protocol	Laboratory
3260B	Volatile Organic Compounds (GC/MS)	SW846	TAL SAV
3270D	Semivolatile Organic Compounds (GC/MS)	SW846	TAL SAV
RSK-175	Dissolved Gases (GC)	RSK	TAL SAV
010C	Metals (ICP)	SW846	TAL SAV
110.1	Alkalinity	MCAVW	TAL SAV
25.2	Chloride	MCAVW	TAL SAV
53.2	Nitrogen, Nitrate-Nitrite	MCAVW	TAL SAV
75.4	Sulfate	MCAWW	TAL SAV
15.1	TOC	MCAWW	TAL SAV
15.1	DOC	MCAWW	TAL SAV

#### Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

RSK = Sample Prep And Calculations For Dissolved Gas Analysis In Water Samples Using A GC Headspace Equilibration Technique, RSKSOP-175,

Rev. 0, 8/11/94, USEPA Research Lab

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

TestAmerica Savannah

FEB 2 8 2014

#### **Definitions/Glossary**

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98280-1

SDG: KPS106

Qualifiers

GC/MS VOA

Qualifier Qualifier Description

Indicates the analyte was analyzed for but not detected.

GC/MS Semi VOA

Qualifier

Qualifier Description

Ü Indicates the analyte was analyzed for but not detected.

**GC VOA** 

Qualifier Ü

Qualifier Description

Indicates the analyte was analyzed for but not detected,

RPD of the LCS and LCSD exceeds the control limits

Metals

Qualifier

Qualifier Description

Ũ Indicates the analyte was analyzed for but not detected.

General Chemistry

Qualifier

Qualifier Description

U

Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation

These commonly used abbreviations may or may not be present in this report.

Listed under the "D" column to designate that the result is reported on a dry weight basis

%R CNF Percent Recovery Contains no Free Liquid

DER Duplicate error ratio (normalized absolute difference)

Dil Fac Dilution Factor

DL, RA, RE, IN

Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metats/anion analysis of the sample

DLC Decision level concentration MDA Minimum detectable activity

EDL Estimated Detection Limit

MDC Minimum detectable concentration MDL Method Detection Limit ML Minimum Level (Dioxin)

NC Not Calculated

ND Not detected at the reporting limit (or MDL or EDL if shown)

PQL Practical Quantitation Limit

QC Quality Control RFR Relative error ratio

RL Reporting Limit or Requested Limit (Radiochemistry)

RPD Relative Percent Difference, a measure of the relative difference between two points

TEF Toxicity Equivalent Factor (Dioxin) Toxicity Equivalent Quotient (Dioxin) TEQ

#### **Detection Summary**

Client: Solutia Inc.

Carbon Dioxide, Free

Project/Site: WGK Long Term Monitoring - 1Q14

Client Sample ID: CPA-MW-5D-0214

TestAmerica Job ID: 680-98280-1

Lab Sample ID: 680-98280-1

310.1

SDG: KPS106

Total/NA

Lab Sample ID: 680-98280-2

Lab Sample ID: 680-98280-3

Lab Sample ID: 680-98280-4

ľ.···						
Analyte	Result Qualifier	RL	MDL Unit	Dil Fac	D Method	Prep Type
Chlorobenzene	1900	20	ug/L	20	8260B	Total/NA
2-Chiorophenoi	26	9.7	ug/L	1	8270D	Total/NA
Ethane	3.9	1.1	ug/L	1	RSK-175	Total/NA
Methane (TCD)	1700 *	390	ug/L	1	RSK-175	Total/NA
iron	19	0.050	mg/L	1	6010C	Total
1						Recoverable
Manganece	A 50	0.010	ma/l	1	6010C	Total

Manganese 0.59 0.010 mg/L 6010C Total Recoverable Chloride 260 10 10 325.2 Total/NA mg/L Sulfate 87 25 mg/L 5 375.4 Total/NA Total Organic Carbon 5.2 1.0 mo/L 415.1 Total/NA Analyte Dil Fac D RL RL Unit Method Prep Type Result Qualifier 530 5.0 310.1 Total/NA Alkalinity mg/L

5.0

mg/L

Client Sample ID: CPA-MW-5D-F(0.2)-0214

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Analyte	Result	Qualifier RL	MDL Unit	Dil Fac	D	Method	Prep Type
Iron, Dissolved	19	0.050	mg/L	1		6010C	Dissolved
Manganese, Dissolved	0.60	0.010	mg/L	1		6010C	Dissolved
Dissolved Organic Carbon	4.9	1.0	mg/L	1		415.1	Dissolved

Client Sample ID: BSA-MW-3D-0214

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	52		50		ug/L	50		8260B	Total/NA
Chlorobenzene	2700		50		ug/L	50		8260B	Total/NA
1,4-Dichlorobenzene	320		50		ug/L	50		8260B	Total/NA
2-Chlorophenol	23		10		ug/L	1		8270D	Total/NA
Ethane	2.6		1.1		ug/L	1		RSK-175	Total/NA
Methane (TCD)	1500	*	390		ug/L	1		RSK-175	Total/NA
Iron	11		0.050		mg/L	1		6010C	Total
Manganese	0.54		0.010		mg/L	1		6010C	Recoverable Total Recoverable
Chloride	140		5.0		mg/L	5		325.2	Total/NA
Sulfate	31		10		mg/L	2		375.4	Total/NA
Total Organic Carbon	4.1		1.0		mg/L	1		415.1	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Alkalinity	560		5.0	******************	mg/L	1		310.1	Total/NA
Carbon Dioxide, Free	42		5.0		mg/L	1		310.1	Total/NA

Client Sample ID: BSA-MW-3D-F(0,2)-0214

Analyte	Result	Qualifier RL	MDL Unit	Dil Fac D	Method	Prep Type
Iron, Dissolved	11	0.050	mg/L	1	6010C	Dissolved
Manganese, Dissolved	0.53	0.010	mg/L	1	6010C	Dissolved
Dissolved Organic Carbon	3.7	1.0	mg/L	1	415,1	Dissolved

This Detection Summary does not include radiochemical test results.

# **Detection Summary**

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98280-1

SDG: KPS106

Client Sample ID: 1Q14 LTM Trip Blank #1

Lab Sample ID: 680-98280-5

No Detections.

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This Detection Summary does not include radiochemical test results.

TestAmerica Job ID: 680-98280-1

## **Client Sample Results**

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

Client Sample ID: CPA-MW-5D-0214 Lab Sample ID: 680-98280-1

Date Collected: 02/03/14 12:30 Date Received: 02/04/14 09:51 . Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Benzene	20	υ	20		ug/L			02/05/14 19:00	2
Chlorobenzene	1900		20		ug/Ĺ			02/05/14 19:00	2
1,2-Dichtorobenzene	20	U	20		ug/L			02/05/14 19:00	2
1,3-Dichtorobenzene	20	υ	20		ug/L			02/05/14 19:00	2
1,4-Dichlorobenzene	20	U	20		ug/L			02/05/14 19:00	21
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
4-Bromofluorobenzene	106		70 - 130					02/05/14 19:00	2
Dibromofluoromethane	108		70 - 130					02/05/14 19:00	2
Toluene-d8 (Surr)	104		70 - 130					02/05/14 19:00	2
Method: 8270D - Semivolatile	- :		•						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
4-Chloroaniline	19	U	19		ug/L		02/06/14 15:30	02/07/14 23:32	
2-Chlorophenol	26		9,7		ug/L		02/06/14 15:30	02/07/14 23:32	
1,2,4-Trichlorobenzene	9.7	U	9.7		ug/L		02/06/14 15:30	02/07/14 23:32	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
?-Fluorobiphenyl	74		38 - 130				02/06/14 15:30	02/07/14 23:32	
?-Fluorophenol	70		25 - 130				02/06/14 15;30	02/07/14 23:32	
Nitrobenzene-d5	. 86		, 39 - 130			•	02/06/14 15:30	02/07/14 23:32	
Phenol-d5	` 76		25 - 130				02/06/14 15:30	02/07/14 23:32	
Terphenyi-d14	74		10 - 143				02/06/14 15:30	02/07/14 23:32	
2,4,6-Tribromophenol	74		31 - 141				02/06/14 15:30	02/07/14 23:32	
Method: RSK-175 - Dissolved	• •								
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Ethane	3,9		1.1		ug/L			02/13/14 15:17	
Ethylene	1.0		1.0		ug/L			02/13/14 15:17	
Methane (TCD)	17 <b>0</b> 0	*	390		ug/L			02/13/14 15:17	
Method: 6010C - Metals (ICP)	<b>'</b>		-		41-44	_	<b>5</b>	A b d	52 F.
Analyte		Qualifier	RL	MUL	Unit	D	Prepared	Analyzed	Dil Fa
roπ -	19		0.050		mg/L		02/04/14 14:48	02/05/14 15:24	
Manganese	0.59		0.010		mg/L		02/04/14 14:48	02/05/14 15:24	
General Chemistry	B4	016	D.		11-24	5	<b></b>	41I	<b>5</b> 11 <b>5</b> -
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Chloride	260		10		mg/L			02/06/14 11:50	1
Nitrate as N	0.050	U	0.050		mg/L			02/04/14 16:05	
Sulfate	87		25		mg/L			02/06/14 14:27	
otal Organic Carbon	5.2		1.0		mg/L			02/04/14 20:38	
\nalyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fa
Alkalinity	530		5.0		mg/L			02/07/14 15:16	
Carbon Dioxide, Free	61		5.0		mg/L			02/07/14 15:16	

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98280-1

SDG: KPS106

Client Sample ID: CPA-MW-5D-F(0.2)-0214

Date Collected: 02/03/14 12:30 Date Received: 02/04/14 09:51 Lab Sample ID: 680-98280-2

Matrix: Water

Method: 6010C - Metals (ICP) - Di	ssolved								
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	19		0.050		mg/L		02/04/14 14:48	02/05/14 15:29	1
Manganese, Dissolved	0.60		0.010		mg/L		02/04/14 14:48	02/05/14 15:29	1
General Chemistry - Dissolved									
Analyte	Result	Qualifler	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	4.9		1.0		mg/L			02/04/14 22:14	1

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Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98280-1

SDG: KPS106

Client Sample ID: BSA-MW-3D-0214

Date Collected: 02/03/14 15:05 Date Received: 02/04/14 09:51

Lab Sample ID: 680-98280-3

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Benzene	52	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	50		ug/L			02/05/14 19:30	5
Chlorobenzene	2700		50		ug/L			02/05/14 19:30	5
1,2-Dichlorobenzene	50	U	50		ug/L			02/05/14 19:30	5
1,3-Dichlorobenzene	50	U	50		ug/L			02/05/14 19:30	5
1,4-Dichlorobenzene	320		50		ug/L			02/05/14 19:30	5
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
1-Bromofluorobenzene	106		70 - 130					02/05/14 19:30	5
Dibromofluoromethane	112		70 - 130					02/05/14 19:30	5
Toluene-d8 (Surr)	101		70 - 130					02/05/14 19:30	5
Method: 8270D - Semivolatil	e Organic Compou	nds (GC/M	S)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	DII Fa
2-Chlorophenol	23		10		ug/L		02/06/14 15:30	02/07/14 23:57	
1,4-Dioxane	10	U	10		ug/L		02/06/14 15:30	02/07/14 23:57	
1,2,4-Trichlorobenzene	10	U	10		ug/L		02/06/14 15:30	02/07/14 23:57	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
2-Fluorobiphenyl	66		38 - 130				02/06/14 15:30	02/07/14 23:57	
2-Fluorophenal	60		25 - 130				02/06/14 15:30	02/07/14 23:57	
litrobenzene-d5	75		39 - 130		•		02/06/14 15:30	02/07/14 23:57	
Phenol-d5	63		25 - 130				02/06/14 15:30	02/07/14 23:57	
Terphenyl-d14	43		10 - 143				02/06/14 15:30	02/07/14 23:57	
2,4,6-Tribromophenol	64		31 - 141				02/06/14 15:30	02/07/14 23:57	
Method: RSK-175 - Dissolve	d Gases (GC)		•						
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
≣thane	2.6		1.1		ug/L			02/13/14 15:29	
Ethylene	1.0	U	1.0		ug/L			02/13/14 15:29	
Methane (TCD)	1500	*	390		ug/L			02/13/14 15:29	
Method: 6010C - Metals (ICP	•					_			
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	DII Fa
fon 	11		0.050		mg/L		02/04/14 14:48	02/05/14 15:34	
Vanganese	0.54		0.010		mg/L		02/04/14 14:48	02/05/14 15:34	
General Chemistry	Posult.	Overlition	DI	MD)	11=34	ь	Bronerod	Analyzad	Di Ca
Analyte		Qualifier	RL	MDL		,	Prepared	Analyzed	Dil Fa
Chloride	140		5.0		mg/L			02/06/14 11:42	
litrate as N	0.050	U	0.050		mg/L			02/04/14 16:00	
Sulfate	31		10		mg/L			02/06/14 14:16	
otal Organic Carbon	4.1		1.0		mg/L			02/04/14 20:54	
nalyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dii Fa
Alkalinity	560		5,0		mg/L			02/07/14 15:26	
Carbon Dioxíde, Free	42		5.0		mg/L			02/07/14 15:26	

TestAmerica Savannah

FEB 2 8 2014 62/

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98280-1

SDG: KPS106

Client Sample ID: BSA-MW-3D-F(0.2)-0214

Date Collected: 02/03/14 15:05 Date Received: 02/04/14 09:51 Lab Sample ID: 680-98280-4

Matrix: Water

Method: 6010C - Metals (ICP) - Dis	solved								
Analyte	Result	Qualifier	RL	MDL	Unit	Ð	Prepared	Analyzed	Dil Fac
Iron, Dissolved	11		0.050		mg/L		02/04/14 14:48	02/05/14 15:38	1
Manganese, Dissolved	0.53		0.010		mg/L		02/04/14 14:48	02/05/14 15:38	1
General Chemistry - Dissolved									
Analyte	Result	Qualifier	RL.	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	3.7		1.0 '		mg/L	•••	***************************************	02/04/14 22:57	1

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Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98280-1

SDG: KPS106

Client Sample ID: 1Q14 LTM Trip Blank #1

Date Collected: 02/03/14 00:00 Date Received: 02/04/14 09:51 Lab Sample ID: 680-98280-5

Matrix: Water

Method: 8260B - Volatile Or	ganic Compounds	(GC/MS)							
Analyte	- '	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	• • • • • • • • • • • • • • • • • • • •	ug/L			02/05/14 13:03	1
Chlorobenzene	1.0	U	1.0		ug/L			02/05/14 13:03	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			02/05/14 13:03	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			02/05/14 13:03	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			02/05/14 13:03	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	101		70 - 130					02/05/14 13:03	1
Dibromofluoromethane	113		70 - 130					02/05/14 13:03	1
Toluene-d8 (Surr)	101		70 - 130					02/05/14 13:03	1

8

TestAmerica Savannah

FEB 28 2014 ESL

#### **Surrogate Summary**

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98280-1

SDG: KPS106

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

				Percent Surro	ogate Recovery (Acceptance Limits)
		₿FB	DBFM	TOL	
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	(70-130)	
680-98280-1	CPA-MW-5D-0214	106	108	104	
680-98280-3	BSA-MW-3D-0214	106	112	101	
680-98280-5	1Q14 LTM Trip Blank #1	101	113	101	
LCS 680-314242/4	Lab Control Sample	107	109	105	
LCSD 680-314242/5	Lab Control Sample Dup	106	107	106	
MB 680-314242/8	Method Blank	101	115	101	
Surrogate Legend					

Surrogate Legend

BFB = 4-Bromofluorobenzene

DBFM = Dibromofluoromethane

TQL = Toluene-d8 (Surr)

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

			Percent Surrogate Recovery (Acceptance Limits)					
		FBP	2FP	NBZ	PHL	TPH	TBP	
Lab Sample ID	Client Sample ID	(38-130)	(25-130)	(39-130)	(25-130)	(10-143)	(31-141)	
680-98280-1	CPA-MW-5D-0214	74	70	86	76	74	74	
680-98280-3	BSA-MW-3D-0214	66	60	75	63	43	64	
LCS 680-314294/7-A	Łab Control Sample	76	68	78	73	80	80 `	
MB 680-314294/6-A	Method Blank	69	61	81	53	74	76	

Surrogate Legend

FBP = 2-Fluorobiphenyl

2FP = 2-Fluorophenol

NBZ = Nitrobenzene-d5

PHL = Phenol-d5

TPH ≈ Terphenyl-d14

TBP = 2,4,6-Tribromophenol

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98280-1

SDG: KPS106

#### Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 680-314242/8

Matrix: Water

Analysis Batch: 314242

Client Sample ID: Method Blank Prep Type: Total/NA

-	MB	MB						
Analyte	Result	Qualifler	RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	ug/L	******** ***** **	y	02/05/14 12:33	1
Chlorobenzene	1.0	U	1.0	ug/L			02/05/14 12:33	1
1,2-Dichlorobenzene	1.0	U	1.0	ug/L			02/05/14 12:33	1
1,3-Dichlorobenzene	1.0	U	1.0	ug/L			02/05/14 12:33	1
1,4-Dichlorobenzene	1,0	U	1.0	ug/L			02/05/14 12:33	1

MB MB

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	101	de Construction de Construction de Colombia (Colombia)	70 - 130		02/05/14 12:33	1
Dibromofluoromethane	115		70 - 130		02/05/14 12:33	1
Toluene-d8 (Surr)	101		70 - 130		02/05/14 12:33	1

Lab Sample ID: LCS 680-314242/4

Matrix: Water

Analysis Batch: 314242

Client Sample ID: Lab Control Sample Prep Type: Total/NA

	Spike	LUS	LCO				76Reυ.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	50,0	51,5		ug/L		103	74 - 123	
Chlorobenzene	50.0	53.1		ug/L		106	79 - 120	
1,2-Dichlorobenzene	50.0	55.2		ug/L		110 ·	77 ~ 124	
1,3-Dichlorobenzene	50.0	55.0		ug/L		110	79 - 123	
1,4-Dichlorobenzene	50.0	54.0		ug/L		108	76 - 124	

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene	107		70 - 130
Dibromofluoromethane	109		70 _ 130
Toluene-d8 (Surr)	105		70 - 130

Lab Sample ID: LCSD 680-314242/5

Matrix: Water

Analysis Batch: 314242

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Allalysis Datcii. 314242										
	Spike	LCSD	LCSD				%Rec.		RPD	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Benzene	50.0	51.6		ug/L		103	74 - 123	0	30	
Chlorobenzene	50.0	52.2		ug/L		104	79 . 120	2	30	
1,2-Dichlorobenzene	50.0	54.7		ug/L		109	77 - 124	1	30	
1,3-Dichlorobenzene	50.0	54.5		ug/L		109	79 - 123	1	30	
1,4-Dichlorobenzene	50.0	53.2		ug/L		106	76 - 124	1	30	

LCSD LCSD

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene	106		70 - 130
Dibromofluoromethane	107		70 - 130
Toluene-d8 (Surr)	106		70 - 130

TestAmerica Savannah

FEB 28 2014 Z2K

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98280-1

SDG: KPS106

#### Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 680-314294/6-A

Matrix: Water

Analysis Batch: 314885

Client Sample ID: Method Blank Prep Type: Total/NA

Prep Batch: 314294

	MB	MB						
Analyte	Result	Qualifier	RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
4-Chloroaniline	20	U	20	ug/L		02/06/14 15:30	02/10/14 15:07	1
2-Chlorophenol	10	U	10	ug/L		02/06/14 15:30	02/10/14 15:07	1
1,4-Dioxane	10	U	10	ug/L		02/06/14 15:30	02/10/14 15:07	1
1,2,4-Trichlorobenzene	10	U	10	ug/L		02/06/14 15:30	02/10/14 15:07	1
	МВ	MB						

мв мв

Surrogate	%Recovery	Qualifier	Limits	Prepared Analyzed	Dil Fac
2-Fluorobiphenyl	69		38 _ 130	02/06/14 15:30 02/10/14 15:07	1
2-Fluorophenol	61		25 _ 130	02/06/14 15:30 02/10/14 15:07	1
Nitrobenzene-d5	81		39 - 130	02/06/14 15;30 02/10/14 15:07	1
Phenol-d5	53		25 - 130	02/06/14 15:30 02/10/14 15:07	1
Terphenyl-d14	74		10 - 143	02/06/14 15:30 02/10/14 15:07	1
2,4,6-Tribromophenol	76		31 - 141	02/06/14 15:30 02/10/14 15:07	1

Lab Sample ID: LCS 680-314294/7-A

Matrix: Water

Analysis Batch: 314717

Client Sample ID: Lab Control Sample

Prep Type: Total/NA Prep Batch: 314294

	Spike	LCS	LCS			%Rec.	
Analyte	Added	Result	Qualifier Unit	D	%Rec	Limits	
4-Chloroaniline	100	55.8	ug/L		56	42 - 130	
2-Chlorophenol	100	72.8	ug/L		73	57 - 130	
1,4-Dioxane	100	59.0	ug/L		59	35 - 130	
1,2,4-Trichlorobenzene .	100	56.3	ug/L		56	42 - 130	

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
2-Fluorobiphenyl	76		38 _ 130
2-Fluorophenol	68		25 - 130
Nitrobenzene-d5	78		39 - 130
Phenol-d5	73		25 _ 130
Terphenyl-d14	80		10 - 143
2,4,6-Tribromophenol	80		31 - 141

#### Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 680-315441/7

Matrix: Water

Analysis Batch: 315441

Client Sample	ID: Method Blank	
0-	on Tunos Total/ALA	

Prep Type: Total/NA

Allalysis Datoll, 510441											
	MB	MB	•			•					
Analyte	Result	Qualifier	RL	MDL	Unit		D	Prepared	Analyzed	Dil Fac	
Ethane	1.1	U	1.1		ug/L			,,	02/13/14 12:45	1	
Ethylene	1.0	U	1.0		ug/L				02/13/14 12:45	1	
Methane	0.58	U	0.58		ug/L				02/13/14 12:45	1	
Methane (TCD)	390	U	390		ug/L				02/13/14 12:45	1	

TestAmerica Savannah

FEB 2 8 2014 27/

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98280-1

SDG: KPS106

#### Method: RSK-175 - Dissolved Gases (GC) (Continued)

Lab Sample ID: LCS 680-315441/3 Client Sample ID: Lab Control Sample Prep Type: Total/NA Matrix: Water Analysis Batch: 315441 LCS LCS %Rec. Spike Added Result Qualifier Unit %Rec Limits Analyte Ethane 288 313 ug/L 108 75 . 125 269 302 ug/L 112 75 - 125 Ethylene 75 - 125 ug/L 102 Methane 154 157

Lab Sample ID: LCS 680-315441/5 Matrix: Water

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analysis Batch: 315441 %Rec. Spike LCS LCS Limits Added Result Qualifier Unit %Rec Analyte 75 - 125 ug/L Methane (TCD) 1920 1480

Client Sample ID: Lab Control Sample Dup Lab Sample ID: LCSD 680-315441/4 Prep Type: Total/NA Matrix: Water

Analysis Batch: 315441

LCSD LCSD %Rec. RPD Spike %Rec Limits RPD Added Result Qualifier Unit Limit Analyte 75 - 125 30 Ethane 288 301 ug/L 104 4 Ethylene 269 288 ug/L 107 75 - 125 30 75 - 125 3 30 Methane 154 153 ug/L

Client Sample ID: Lab Control Sample Dup Lab Sample ID: LCSD 680-315441/6 Prep Type: Total/NA Matrix: Water

Analysis Batch: 315441 LCSD LCSD %Rec. RPD Spike Result Qualifier %Rec Limits RPD Limit Added Unit Analyte 75 - 125 (32) 30 1920 2040 ug/L Methane (TCD)

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 680-314191/1-A Client Sample ID: Method Blank Prep Type: Total Recoverable

Matrix: Water

Prep Batch: 314191 Analysis Batch: 314463

MR MR Prepared Dil Fac MDL Unit D Analyzed Analyte Result . Qualifier RL 0.050 U 0.050 mg/L 02/04/14 14:48 02/05/14 16:49 fron 02/04/14 14:48 02/05/14 16:49 Iron, Dissolved 0.050 U 0.050 mg/L 0.010 02/04/14 14:48 02/05/14 16:49 0.010 U mg/L Manganese 02/04/14 14:48 02/05/14 16:49 Manganese, Dissolved 0.010 U 0.010 mg/L

Client Sample ID: Lab Control Sample Lab Sample ID: LCS 680-314191/2-A

Prep Type: Total Recoverable Matrix: Water Prep Batch: 314191 Analysis Batch: 314463

Spike LCS LCS %Rec Limits Added Result Qualifier Unit Analyte 75 - 125 Iron 5.00 5.12 mg/L 102 Iron, Dissolved 5.00 5.12 mg/L 102 75 - 125106 75 - 125 0.500 0.528 mg/L Manganese 106 75 - 125 0.500 0.528 mg/L Manganese, Dissolved

TestAmerica Job ID: 680-98280-1

SDG: KPS106

Method:	310.1	<ul> <li>Alkalinity</li> </ul>	,
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Lab Sample ID: MB 680-314795/5

Matrix: Water

Analysis Batch: 314795

Client Sample ID: Method Blank

Prep Type: Total/NA

2		MB	WB							
	Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Alkalinity	5.0	บ	5.0		mg/L			02/07/14 14:38	1
	Carbon Dioxide, Free	5.0	υ	5.0		mg/L			02/07/14 14:38	1

Lab Sample ID: LCS 680-314795/6

Matrix: Water

Analysis Batch: 314795

Analyte Alkalinity

Spike Added 250

LCS LCS Result Qualifier 231

Unit mg/L

%Rec

%Rec. Limits 80 - 120

%Rec.

Client Sample ID: Lab Control Sample

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Type: Total/NA

Lab Sample ID: LCSD 680-314795/22

Matrix: Water

Alkalinity

Analysis Batch: 314795

Analyte

Spike Added 250

LCSD LCSD Result Qualifier 223

Unit mg/L %Rec Limits 80 - 120

92

RPD RPD Limit

Prep Type: Total/NA

Prep Type: Total/NA

Method: 325.2 - Chloride

Lab Sample ID: MB 680-314548/16

Matrix: Water

Analysis Batch: 314548

MR MR

Analyte

Result Qualifier 1.0 U

RL 1.0

MDL Unit mg/L Prepared

Analyzed 02/06/14 11:57

Client Sample ID: Lab Control Sample

85 - 115

Client Sample ID: Method Blank

Dil Fac

Lab Sample ID: LCS 680-314548/1

Matrix: Water

Chloride

Chloride

Analyte

Nitrate as N

Analysis Batch: 314548

Analyte

Spike Added 25,0

LCS LCS Result Qualifier 26.0

Unit mg/L %Rec 104 %Rec. Limits

Client Sample ID: Method Blank

Method: 353.2 - Nitrogen, Nitrate-Nitrite

Lab Sample ID: MB 680-314208/13

Matrix: Water

Analysis Batch: 314208

MB MB

Result Qualifier 0.050 U

RL 0.050 MDI Unit mg/L D Prepared

02/04/14 15:54

Client Sample ID: Lab Control Sample

Dil Fac Analyzed

Prep Type: Total/NA

Prep Type: Total/NA

Lab Sample ID: LCS 680-314208/14

Matrix: Water

Analysis Batch: 314208

Analyte Nitrate as N Nitrate Nitrite as N

Spike Added 0.500 1.00

LCS LCS Result Qualifier 0.541 1.02

Unit mg/L

%Rec 108 102

%Rec. Limits 90 - 110

90 - 110

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Lab Sample ID: LCS 680-314208/14									Cli	ient	Sample	ID: Lab Co		-
Matrix: Water												Prep Ty	pe: To	otal/NA
Analysis Batch: 314208												0/ D		
8 t- 4 -				Spike		LCS		1114		_	e/ Dos	%Rec.		
Analyte				Added		t Qua	ilitier	Unit		D	%Rec 96	Limits 90 110		
Nitrite as N				0.500	0.480	J		mg/Ł			96	90 - 310		
Method: 375.4 - Sulfate														
Lab Sample ID: MB 680-314563/5											Client S	ample ID: M		
Matrix: Water												Prep Ty	pe: To	otal/NA
Analysis Batch: 314563														
	_		MB						_	_		<b>A</b>		
Analyte Sulfate	Re	5,0	Qualifler		RL 5.0	MUL	Unit mg/L		D	P1	repared	Analyze 02/06/14 14	.,	Dil Fac
		3,0	Ü		3.0		mg/c					02700114 F-		•
Lab Sample ID: LCS 680-314563/17									CI	ient	Sample	ID: Lab Co	ntrol S	Sample
Matrix: Water												Prep Ty	pe: To	otal/NA
Analysis Batch: 314563														
				Splke		S LCS						%Rec.		
Analyte				Added		t Qua	llifier	Unit		D	%Rec	Limits		
Sulfate				20.0	20.	ì		mg/L			100	75 - 125		
Method: 415.1 - DOC														
Lab Sample ID: MB 680-314352/25											Client S	ample ID: N	ethod	i Blank
Lab Sample ID: MB 680-314352/25 Matrix: Water											Client S	ample ID: M Prep Typ		
											Client S	•		
Matrix: Water		мв	мв								Client S	•		
Matrix: Water Analysis Batch: 314352 Analyte	Re	esult	Qualifier		RL	MDL	Unit		D	Р	Client S	Prep Typ	e: Dis	
Matrix: Water Analysis Batch: 314352	Re		Qualifier		RL 1.0	MDL	Unit mg/L		<b>D</b>	Р		Prep Typ	e: Dis	solved
Matrix: Water Analysis Batch: 314352 Analyte		esult	Qualifier			MDL					repared	Prep Typ	e: Dis d 1:59	Solved Dil Fac
Matrix: Water Analysis Batch: 314352  Analyte Dissolved Organic Carbon		esult	Qualifier			MDL					repared	Prep Typ  Analyze  02/04/14 2	e: Dis d ntrol S	DII Fac
Matrix: Water Analysis Batch: 314352  Analyte Dissolved Organic Carbon  Lab Sample ID: LCS 680-314352/24		esult	Qualifier			MDL					repared	Prep Typ  Analyze 02/04/14 2	e: Dis d ntrol S	DII Fac
Matrix: Water Analysis Batch: 314352  Analyte Dissolved Organic Carbon  Lab Sample ID: LCS 680-314352/24 Matrix: Water		esult	Qualifier	Splke	1.0	MDL	mg/L				repared	Prep Typ  Analyze 02/04/14 2	e: Dis d ntrol S	DII Fac
Matrix: Water Analysis Batch: 314352  Analyte Dissolved Organic Carbon  Lab Sample ID: LCS 680-314352/24 Matrix: Water		esult	Qualifier	Spike Added	1.0 LC:		mg/L	Unit			repared	Analyze 02/04/14 2 e ID: Lab Co Prep Typ	e: Dis d ntrol S	DII Fac
Matrix: Water Analysis Batch: 314352  Analyte Dissolved Organic Carbon  Lab Sample ID: LCS 680-314352/24 Matrix: Water Analysis Batch: 314352  Analyte Dissolved Organic Carbon		esult	Qualifier	•	1.0 LC:	S LCS	mg/L	Unit mg/L		ient	repared : Sample	Analyze 02/04/14 2 PID: Lab Co Prep Typ %Rec.	e: Dis d ntrol S	DII Fac
Matrix: Water Analysis Batch: 314352  Analyte Dissolved Organic Carbon  Lab Sample ID: LCS 680-314352/24  Matrix: Water Analysis Batch: 314352  Analyte Dissolved Organic Carbon		esult	Qualifier	Added	1.0 LC: Resu	S LCS	mg/L	mg/L	CI	ient	repared : Sample %Rec 106	Analyze 02/04/14 2 PID: Lab Co Prep Typ %Rec. Limits 80 - 120	e: Dis d i:59 ntrol S e: Dis	Dil Fac
Matrix: Water Analysis Batch: 314352  Analyte Dissolved Organic Carbon  Lab Sample ID: LCS 680-314352/24  Matrix: Water Analysis Batch: 314352  Analyte Dissolved Organic Carbon		esult	Qualifier	Added	1.0 LC: Resu	S LCS	mg/L	mg/L	CI	ient	repared : Sample %Rec 106	Analyze 02/04/14 2 PID: Lab Co Prep Typ %Rec. Limits 80 - 120  CPA-MW-5I	e: Dis  d 1:59 ntrol S e: Dis	Dil Fac 1 Sample ssolved 2)-0214
Matrix: Water Analysis Batch: 314352  Analyte Dissolved Organic Carbon  Lab Sample ID: LCS 680-314352/24 Matrix: Water Analysis Batch: 314352  Analyte Dissolved Organic Carbon  Lab Sample ID: 680-98280-2 MS Matrix: Water		esult	Qualifier	Added	1.0 LC: Resu	S LCS	mg/L	mg/L	CI	ient	repared : Sample %Rec 106	Analyze 02/04/14 2 PID: Lab Co Prep Typ %Rec. Limits 80 - 120	e: Dis  d 1:59 ntrol S e: Dis	Dil Fac 1 Sample ssolved 2)-0214
Matrix: Water Analysis Batch: 314352  Analyte Dissolved Organic Carbon  Lab Sample ID: LCS 680-314352/24 Matrix: Water Analysis Batch: 314352  Analyte Dissolved Organic Carbon  Lab Sample ID: 680-98280-2 MS Matrix: Water		1.0	Qualifier	Added	1.0 LC: Resu 21.	S LCS	mg/L	mg/L	CI	ient	repared : Sample %Rec 106	Analyze 02/04/14 2 PID: Lab Co Prep Typ %Rec. Limits 80 - 120  CPA-MW-5I	e: Dis  d 1:59 ntrol S e: Dis	Dil Fac 1 Sample ssolved 2)-0214
Matrix: Water Analysis Batch: 314352  Analyte Dissolved Organic Carbon  Lab Sample ID: LCS 680-314352/24  Matrix: Water Analysis Batch: 314352  Analyte Dissolved Organic Carbon  Lab Sample ID: 680-98280-2 MS  Matrix: Water Analysis Batch: 314352		1.0	Qualifier U	Added 20.0	LC: Resu 21.	S LCS	mg/L S slifler	mg/L	CI	ient	repared : Sample %Rec 106	Analyze 02/04/14 2 e ID: Lab Co Prep Typ %Rec. Limits 80 - 120  CPA-MW-5I Prep Typ	e: Dis  d 1:59 ntrol S e: Dis	Dil Fac Sample solved
Matrix: Water Analysis Batch: 314352  Analyte Dissolved Organic Carbon  Lab Sample ID: LCS 680-314352/24  Matrix: Water Analysis Batch: 314352  Analyte Dissolved Organic Carbon  Lab Sample ID: 680-98280-2 MS  Matrix: Water	Sample	1.0	Qualifier U	Added 20.0 Spike	LC: Resu 21.	S LCS t Qua 3	mg/L S slifler	mg/L	CI	D Sar	*Sample *Rec 106 mple ID:	Analyze 02/04/14 2 Prep Typ %Rec. Limits 80 - 120  CPA-MW-5I Prep Typ %Rec.	e: Dis  d 1:59 ntrol S e: Dis	Dil Fac 1 Sample ssolved 2)-0214
Matrix: Water Analysis Batch: 314352  Analyte Dissolved Organic Carbon  Lab Sample ID: LCS 680-314352/24  Matrix: Water Analysis Batch: 314352  Analyte Dissolved Organic Carbon  Lab Sample ID: 680-98280-2 MS  Matrix: Water Analysis Batch: 314352  Analyte Dissolved Organic Carbon	Sample Result	1.0	Qualifier U	Added 20.0 Spike Added	LC: Resu 21. M: Resu	S LCS t Qua 3	mg/L S slifler	mg/L Unit mg/L	Client	D Sar	%Rec 106 mple ID:	Analyze 02/04/14 2 EID: Lab Co Prep Typ %Rec. Limits 80 - 120  CPA-MW-5I Prep Typ %Rec. Limits 80 - 120	e: Dis  d i:59  ntrol S e: Dis  D-F(0.2	Dil Fac Sample ssolved 2)-0214 ssolved
Matrix: Water Analysis Batch: 314352  Analyte Dissolved Organic Carbon  Lab Sample ID: LCS 680-314352/24  Matrix: Water Analysis Batch: 314352  Analyte Dissolved Organic Carbon  Lab Sample ID: 680-98280-2 MS  Matrix: Water Analysis Batch: 314352  Analyte Dissolved Organic Carbon  Lab Sample ID: 680-98280-2 MS  Matrix: Water Analysis Batch: 314352  Analyte Dissolved Organic Carbon	Sample Result	1.0	Qualifier U	Added 20.0 Spike Added	LC: Resu 21. M: Resu	S LCS t Qua 3	mg/L S slifler	mg/L Unit mg/L	Client	D Sar	%Rec 106 mple ID:	Analyze 02/04/14 2 EID: Lab Co Prep Typ %Rec. Limits 80 - 120  CPA-MW-5I Prep Typ %Rec. Limits 80 - 120  CPA-MW-5I	e: Dis  d 1:59  ntrol S e: Dis  D-F(0.2	Dil Fac Sample ssolved 2)-0214 ssolved
Matrix: Water Analysis Batch: 314352  Analyte Dissolved Organic Carbon  Lab Sample ID: LCS 680-314352/24 Matrix: Water Analysis Batch: 314352  Analyte Dissolved Organic Carbon  Lab Sample ID: 680-98280-2 MS Matrix: Water Analysis Batch: 314352  Analyte Dissolved Organic Carbon  Lab Sample ID: 680-98280-2 MS Matrix: Water Analysis Batch: 314352  Analyte Dissolved Organic Carbon  Lab Sample ID: 680-98280-2 MSD Matrix: Water	Sample Result	1.0	Qualifier U	Added 20.0 Spike Added	LC: Resu 21. M: Resu	S LCS t Qua 3	mg/L S slifler	mg/L Unit mg/L	Client	D Sar	%Rec 106 mple ID:	Analyze 02/04/14 2 EID: Lab Co Prep Typ %Rec. Limits 80 - 120  CPA-MW-5I Prep Typ %Rec. Limits 80 - 120	e: Dis  d 1:59  ntrol S e: Dis  D-F(0.2	Dil Fac 1 Sample ssolved 2)-0214 ssolved
Matrix: Water Analysis Batch: 314352  Analyte Dissolved Organic Carbon  Lab Sample ID: LCS 680-314352/24 Matrix: Water Analysis Batch: 314352  Analyte Dissolved Organic Carbon  Lab Sample ID: 680-98280-2 MS Matrix: Water Analysis Batch: 314352  Analyte Dissolved Organic Carbon  Lab Sample ID: 680-98280-2 MSD	Sample Result	Sam Qua	Qualifier U	Added 20.0 Spike Added	LC: Resu 21. M: Resu 26.	S LCS t Qua 3	mg/L S slifler	mg/L Unit mg/L	Client	D Sar	%Rec 106 mple ID:	Analyze 02/04/14 2 EID: Lab Co Prep Typ %Rec. Limits 80 - 120  CPA-MW-5I Prep Typ %Rec. Limits 80 - 120  CPA-MW-5I	e: Dis  d 1:59  ntrol S e: Dis  D-F(0.2	Dil Fac 1 Sample ssolved 2)-0214 ssolved
Matrix: Water Analysis Batch: 314352  Analyte Dissolved Organic Carbon  Lab Sample ID: LCS 680-314352/24 Matrix: Water Analysis Batch: 314352  Analyte Dissolved Organic Carbon  Lab Sample ID: 680-98280-2 MS Matrix: Water Analysis Batch: 314352  Analyte Dissolved Organic Carbon  Lab Sample ID: 680-98280-2 MSD Matrix: Water	Sample Result 4.9	Sam Qua	Qualifier U ple lifier	Added 20.0 Spike Added 20.0	LC: Resu 21. M: Resu 26.	S LCS  LCS  S MS  S MS	mg/L S sliffer allfier	mg/L Unit mg/L	Client	D Sar	%Rec 106 mple ID:	Analyze 02/04/14 2 e ID: Lab Co Prep Typ %Rec. Limits 80 - 120  CPA-MW-5I Prep Typ %Rec. Limits	e: Dis  d 1:59  ntrol S e: Dis  D-F(0.2	Dil Face Sample solved 2)-0214 solved 2)-0214
Matrix: Water Analysis Batch: 314352  Analyte Dissolved Organic Carbon  Lab Sample ID: LCS 680-314352/24 Matrix: Water Analysis Batch: 314352  Analyte Dissolved Organic Carbon  Lab Sample ID: 680-98280-2 MS Matrix: Water Analysis Batch: 314352  Analyte Dissolved Organic Carbon  Lab Sample ID: 680-98280-2 MSD Matrix: Water Analysis Batch: 314352	Sample Result 4.9	Sam Qua	Qualifier U ple lifier	Added 20.0  Spike Added 20.0  Spike	LC: Resu 21. M: Resu 26.	LCS LCS MS MS MS MS MS MS MS MS MS MS MS MS MS	mg/L S sliffer allfier	mg/L Unit mg/L	Client	D Sar	*Rec 106 nple ID: *Rec 107	Analyze 02/04/14 2 PID: Lab Co Prep Typ %Rec. Limits 80 - 120  CPA-MW-5I Prep Typ %Rec. Limits 80 - 120  CPA-MW-5I Prep Typ	e: Dis  d 1:59  htrol S e: Dis  O-F(0.2 e: Dis	Dil Face Sample solved 2)-0214 solved 2)-0214 solved RPI

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98280-1

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Type: Total/NA

SDG: KPS106

Method: 415.1 - TOC

Lab Sample ID: MB 680-314351/2

Matrix: Water

Analysis Batch: 314351

MR MR

Result Qualifler Total Organic Carbon

1.0 U

RL 1.0 MDL Unit mg/L

Prepared Analyzed 02/04/14 15:49

Client Sample ID: Lab Control Sample

%Rec.

Dil Fac

Lab Sample ID: LCS 680-314351/5

Matrix: Water

Total Organic Carbon

Analysis Batch: 314351

Analyte

Spike Added 20.0

LCS LCS Result Qualifier 21,3

Unit mg/L

Limits 106 80 - 120

TestAmerica Savannah

FEB 88 2014 GAK

# **QC Association Summary**

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98280-1

SDG: KPS106

GC/MS VOA					
Analysis Batch: 31424	2				
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-98280-1	CPA-MW-5D-0214	Total/NA	Water	8260B	***************************************
680-98280-3	BSA-MW-3D-0214	Totai/NA	Water	8260B	
680-98280-5	1Q14 LTM Trip Blank #1	Total/NA	Water	8260B	
LCS 680-314242/4	Lab Control Sample	Total/NA	Water	8260B	
LCSD 680-314242/5	Lab Control Sample Dup	Total/NA	Water	8260B	
MB 680-314242/8	Method Blank	Total/NA	Water	8260B	
GC/MS Semi VOA				AX.,//	
Prep Batch: 314294					
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-98280-1	CPA-MW-5D-0214	Total/NA	Water	3520C	
680-98280-3	BSA-MW-3D-0214	Total/NA	Water	3520C	
LCS 680-314294/7-A	Lab Control Sample	Total/NA	Water	3520C	
MB 680-314294/6-A	Method Blank	Total/NA	Water	3520C	
Analysis Batch: 31471	7				
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-98280-1	CPA-MW-5D-0214	Total/NA	Water	8270D	314294
680-98280-3	BSA-MW-3D-0214	Total/NA	Water	8270D	314294
LCS 680-314294/7-A	Lab Control Sample	Total/NA	Water	8270D	314294
Analysis Batch: 31488	· 5	•	•		•
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 680-314294/6-A	Method Blank	Total/NA	Water	8270D	314294
GC VOA					
Analysis Batch: 31544	1				
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-98280-1	CPA-MW-5D-0214	Total/NA	Water	RSK-175	······································
680-98280-3	BSA-MW-3D-0214	Total/NA	Water	RSK-175	
LCS 680-315441/3	Lab Control Sample	Total/NA	Water	RSK-175	
LCS 680-315441/5	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 680-315441/4	Lab Control Sample Dup	Total/NA	Water	RSK-175	
LCSD 680-315441/6	Lab Control Sample Dup	Total/NA	Water	RSK-175	
MB 680-315441/7	Method Blank	Total/NA	Water	RSK-175	
Metals					
rep Batch: 314191		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			
	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
Lab Sample ID			Water	3005A	
680-98280-1	CPA-MW-5D-0214	Total Recoverable	TTAICI	,	
680-98280-1	CPA-MW-5D-0214 CPA-MW-5D-F(0.2)-0214	Total Recoverable Dissolved	Water	3005A	
680-98280-1 680-98280-2	CPA-MW-5D-F(0.2)-0214				
680-98280-1 680-98280-2 680-98280-3	CPA-MW-5D-F(0.2)-0214 BSA-MW-3D-0214	Dissolved Total Recoverable	Water Water	3005A 3005A	
	CPA-MW-5D-F(0.2)-0214	Dissolved	Water	3005A	

# **QC Association Summary**

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98280-1

SDG: KPS106

Metals (Continued)		· · · · · · · · · · · · · · · · · · ·			
Analysis Batch: 314463					
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-98280-1	CPA-MW-5D-0214	Total Recoverable	Water	6010C	314191
680-98280-2	CPA-MW-5D-F(0.2)-0214	Dissolved	Water	6010C	314191
680-98280-3	BSA-MW-3D-0214	Total Recoverable	Water	6010C	314191
680-98280-4	8SA-MW-3D-F(0.2)-0214	Dissolved	Water	6010C	314191
LCS 680-314191/2-A	Lab Control Sample	Total Recoverable	Water	6010C	314191
MB 680-314191/1-A	Method Blank	Total Recoverable	Water	6010C	314191
General Chemistry					
Analysis Batch: 314208					
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-98280-1	CPA-MW-5D-0214	Total/NA	Water	353,2	
680-98280-3	BSA-MW-3D-0214	Total/NA	Water	353.2	
LCS 680-314208/14	Lab Control Sample	Total/NA	Water	353.2	
MB 680-314208/13	Method Błank	Total/NA	Water	353.2	
Analysis Batch: 314351					
Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batch
680-96280-1	CPA-MW-5D-0214	Total/NA	Water	415.1	
680-98280-3	BSA-MW-3D-0214	Total/NA	Water	415.1	
LCS 680-314351/5	Lab Control Sample	Total/NA	Water	415.1	
MB 680-314351/2	Method Blank	Total/NA	Water	415.1	1
Analysis Batch: 314352					
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-98280-2	CPA-MW-5D-F(0.2)-0214	Dissolved	Water	415,1	
680-98280-2 MS	CPA-MW-5D-F(0.2)-0214	Dissolved	Water	415.1	
680-98280-2 MSD	CPA-MW-5D-F(0.2)-0214	Dissolved	Water	415.1	
680-98280-4	BSA-MW-3D-F(0.2)-0214	Dissolved	Water	415.1	
LCS 680-314352/24	Lab Control Sample	Dissolved	Water	415.1	
MB 680-314352/25	Method Blank	Dissolved	Water	415.1	
Analysis Batch: 314548					
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-98280-1	CPA-MW-5D-0214	Total/NA	Water	325.2	
680-98280-3	BSA-MW-3D-0214	Total/NA	Water	325.2	
LCS 680-314548/1	Lab Control Sample	Total/NA	Water	325.2	
MB 680-314548/16	Method Blank	Total/NA	Water	325.2	
Analysis Batch: 314563					
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-98280-1	CPA-MW-5D-0214	Total/NA	Water	375.4	
680-98280-3	BSA-MW-3D-0214	Total/NA	Water	375.4	
LCS 680-314563/17	Lab Control Sample	Total/NA	Water	375,4	
MB 680-314563/5	Method Blank	Total/NA	Water	375,4	
Analysis Batch: 314795					
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-98280-1	CPA-MW-5D-0214	Total/NA	Water	310.1	
680-98280-3	BSA-MW-3D-0214	Total/NA	Water	310.1	

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FEB 28 2014

# **QC Association Summary**

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98280-1

SDG: KPS106

#### General Chemistry (Continued)

#### Analysis Batch: 314795 (Continued)

	Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batch
	LCS 680-314795/6	Lab Control Sample	Total/NA	Water	310,1	
i	LCSD 680-314795/22	Lab Control Sample Dup	Total/NA	Water	310.1	
	MB 680-314795/5	Method Blank	Total/NA	Water	310.1	
į						

TestAmerica Savannah

FEB 8 8 2014

#### Lab Chronicle

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98280-1

SDG: KPS106

Client Sample ID: CPA-MW-5D-0214

Date Collected: 02/03/14 12:30 Date Received: 02/04/14 09:51 Lab Sample ID: 680-98280-1

Matrix: Water

	Batch	Batch		Dilution	Batch	Prepared		
Ргер Туре	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		20	314242	02/05/14 19:00	TF1	TAL SAV
Total/NA	Prep	3520C			314294	02/06/14 15:30	RBS	TAL SAV
Total/NA	Analysis	8270D		1	314717	02/07/14 23:32	NED	TAL SAV
Total/NA	Analysis	RSK-175		1	315441	02/13/14 15:17	TAR	TAL SAV
Total Recoverable	Prep	3005A			314191	02/04/14 14:48	ВЈВ	TAL SAV
Total Recoverable	Analysis	6010C		1	314463	02/05/14 15:24	BCB	TAL SAV
Total/NA	Analysis	353.2		1	314208	02/04/14 16:05	GRX	TAL SAV
Total/NA	Analysis	415.1		1	314351	02/04/14 20:38	JER	TAL SAV
Total/NA	Analysis	325.2		10	314548	02/06/14 11:50	JME	TAL SAV
Total/NA	Analysis	375.4		5	314563	02/06/14 14:27	JME	TAL SAV
Total/NA	Analysis	310.1		1	314795	02/07/14 15:16	LBH	TAL SAV

Client Sample ID: CPA-MW-5D-F(0.2)-0214

Date Collected: 02/03/14 12:30

Date Received: 02/04/14 09:51

Lab Sample ID: 680-98280-2

Matrix: Water

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run '	Factor	Number	or Analyzed	Analyst	Lab
Dissolved	Prep	3005A	***************************************		314191	02/04/14 14:48	BJB	TAL SAV
Dissolved	Analysis	6010C		1	314463	02/05/14 15:29	BCB	TAL SAV
Dissolved	Analysis	415.1		1	314352	02/04/14 22:14	JER	TAL SAV

Client Sample ID: BSA-MW-3D-0214

Date Collected: 02/03/14 15:05

Date Received: 02/04/14 09:51

Matrix: Water

	Batch	Batch		Dilution	Batch	Prepared		
Ргер Туре	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B	***************************************	50	314242	02/05/14 19:30	TF1	TAL SAV
Total/NA	Prep	3520C			314294	02/06/14 15:30	RBS	TAL SAV
Total/NA	Analysis	8270D		, 1	314717	02/07/14 23:57	NED	TAL SAV
Total/NA	Analysis	RSK-175		1	315441	02/13/14 15:29	TAR	TAL SAV
Total Recoverable	Prep	3005A			314191	02/04/14 14:48	BJB	TAL SAV
Total Recoverable	Analysis	6010C		1	314463	02/05/14 15:34	BCB	TAL SAV
Total/NA	Analysis	353.2		1	314208	02/04/14 16:00	GRX	TAL SAV
Total/NA	Analysis	415.1		1	314351	02/04/14 20:54	JER	TAL SAV
Total/NA	Analysis	325.2		5	314548	02/06/14 11:42	JME	TAL SAV
Total/NA	Analysis	375.4		2	314563	02/06/14 14:16	JME	TAL SAV
Total/NA	Analysis	310.1		1	314795	02/07/14 15:26	LBH	TAL SAV

#### Lab Chronicle

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98280-1

SDG: KPS106

Client Sample ID: BSA-MW-3D-F(0,2)-0214

Date Collected: 02/03/14 15:05 Date Received: 02/04/14 09:51

Lab Sample ID: 680-98280-4

Matrix: Water

Andreador Anna		Batch	Batch		Dilution	Batch	Prepared		
*******	Ргер Туре	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
***************************************	Dissolved	Prep	3005A			314191	02/04/14 14:48	вув	TAL SAV
	Dissolved	Analysis	6010C		1 -	314463	02/05/14 15:38	BCB	TAL SAV
********	Dissolved	Analysis	415.1		1	314352	02/04/14 22:57	JER	TAL SAV

Client Sample ID: 1Q14 LTM Trip Blank #1

Date Collected: 02/03/14 00:00

Date Received: 02/04/14 09:51

Lab Sample ID: 680-98280-5

Matrix: Water

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	314242	02/05/14 13:03	TF1	TAL SAV

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

#### Savannah

Page 28 of 30

5102 LaRoche Avenue

#### Savannah, GA 31404

# Chain of Custody Record



phone 912.354.7858 fax 912.352.0165																				Te	stAmerica	Laborat	ories, I	nc.
Client Contact	Project Ma	anager: Bol	Billman			Site	Cont	act: N	Mich	ael C	orbet	t		100		57/6	9113	<b>AND S</b>			C No:		<del></del>	***************************************
URS Corporation	Tel/Fax: (314) 743-4108			Lab	Lab Contact: Michele Kersey Ca					Carrier: Fed EX				/ of		Cs								
1001 Highlands Plaza Drive West, Suite 300		Analysis T	arnaround	Time				T	T		Т	T								T			***************************************	
St Louis, MO 63110		r(C)orWo					1			÷		Ì												
(314) 429-0100 Phone	] т.	AT if different :	Forn Below 🚅	jandar	4	8		-		۱ <del>۰</del>	ای									- 1				
(314) 429-0462 FAX		2	weeks								2		190							SD	G No.			,
Project Name: 1Q14 LTM GW Sampling		1	week				Ì	18		2	<b>≨</b>		2											
Site: Solutia WG Krummrich Facility		:	2 days			8	<u>.                                     </u>	8	÷	3	۾ ۾	١.	1 1											
PO#			l day			de S	2 2	l b	y 31	3	2		5	415.1										
Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	s of Cont.	Fiftered Sample	VOCs by \$2660 SVOCs by \$2100*	Total Pe/Min by 6010C	Alk/CO2 by 318,1	Chloride by 328.2/Sulfate by 375.4	Dissolved Gases by RSK 175 Nitrate lw 353.2	TOC by 415.1	Dissolved Fc/Mu by 6010C	DOC by 41							Samr	le Specific	Notes:	
CPA-MW-5D -0214	2/3/14	(⊋30	G	Water	16		3 2	1	1	1	3 2	3										o		
CPA-MW- 5-D - F(0.2)-0214		1230	G	Water	2	х							1	1								80-08 80-08		
CPA MW-SD-COTT-MS		1330	-6-	1/4/32	3		3 _	<u> </u>														8286		
CFA MW-SD-0214-MSD	<del></del>	1230	-6-	100/4	2		3	Ţ								T						0		₹
BSA-MW-3D-0214		1505	6	Water			32	1	i	1 :	3 5	23	†·	$\vdash$		$\top$			++	+-				
BSA-MW-3D-F(0.2)-0214	1.7	1505	6	Water	2	M,	70	+-	-1-	115	<u> </u>		1	$\dagger$	_	╅			11			ğ		
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1Q14 LTM Trip Blank #	2/3/14			Water	2		2	1			T		Τ								<del></del>			
Preservation Used: 1= Icc. 2= HCl: 3= H2SO4; 4=HNO3; 5=NaO	H: 6= Other	Γ					2 1		1	1	2 3,	1 3	4	2									<del></del>	***************************************
Possible Hazard Identification						· S	amp.	ie Di	spa	sal ( )	A fee	ma	y be	ass	essec	if sa	mple	s are	retain	ed long	ger than 1	month)		
Non-Hazard Flammable Skin Irritant	Son I	3	nown					Retu	ım To	o Clie	nt			spo	osal B	y Lat	>		Aiv	re For_		Months		
Special Instructions/QC Requirements & Comments: 214/14 MS/NSD Canceled per N.M	nenoval	d d.Rajn	alar		•								ě						2	.80	°C - 982	180		
Relinguished by: Walt	Сотралу:	URS		Date/Tir 3/3//4	ne: 16	30 R	eceiv:	ed by	/t						C	ompa	лу:			Date	e/Time:		VIII.	
Relinquished by:	Company:			Date/Tir			teceive	ed by	/;						Ċ	ompa	ny:			Date	e/Time:			
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FEB 2 8 2014 526

# Login Sample Receipt Checklist

Client: Solutia Inc.

Job Number: 680-98280-1

SDG Number: KPS106

List Source: TestAmerica Savannah

Login Number: 98280 List Number: 1

Creator: Conner, Keaton

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>N/A</td> <td></td>	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	•
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

FEB 2 8 2014

# **Certification Summary**

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98280-1

SDG: KPS106

#### Laboratory: TestAmerica Savannah

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID SAVLAB	Expiration Date
ADL A	AFCEE			00 00 45
A2LA	DoD ELAP		399.01	02-28-15
A2LA	ISO/IEC 17025		399.01	02-28-15
Alabama	State Program	4	41450	06-30-14
Arkansas DEQ	State Program	6	88-0692	01-31-15
California 	NELAP	9	3217CA	07-31-14
Colorado	State Program	8	N/A	12-31-14
Connecticut	State Program	1	PH-0161	03-31-15
Florida	NELAP	4	E87052	06-30-14
GA Dept. of Agriculture	State Program	4	N/A	06-30-14
Georgia	State Program	4	N/A	06-30-14
Georgia	State Program	4	803	06-30-14
Guam	State Program	9	09-005r	04-17-14
Hawaii	State Program	9	N/A	06-30-14
Illinois	NELAP	5	200022	11-30-14
Indiana	State Program	5	N/A	06-30-14
owa	State Program	7	353	07-01-15
Kentucky (DW)	State Program	4	90084	12-31-14
Kentucky (UST)	State Program	4	18	06-30-14
∟ouisiana	NELAP	6	LA100015	12-31-14
Maine	State Program	1	GA00006	08-16-14
Maryland	State Program	3	250	12-31-14
Massachusetts'	State Program	1 '	M-GA006	06-30-14
Michigan	State Program	5	9925	06-30-14
Mississippi	State Program	4	N/A	06-30-14
Montana	State Program	8	CERT0081	01-01-15
Nebraska	State Program	7	TestAmerica-Savannah	06-30-14
New Jersey	NELAP	2	GA769	06-30-14
New Mexico	State Program	6	N/A	06-30-14
New York	NELAP	2	10842	03-31-14
North Carolina DENR	State Program	4	269	12-31-14
North Carolina DHHS	State Program	4	13701	07-31-14
Okłahoma -	State Program	6	9984	08-31-14
Pennsylvania	NELAP	3	68-00474	06-30-14
Puerto Rico	State Program	2	GA00006	01-01-14 *
South Carolina	State Program	4	98001	06-30-14
Tennessee	State Program	4	TN02961	06-30-14
Texas	NELAP	6	T104704185-08-TX	11-30-14
JSDA	Federal		SAV 3-04	04-07-14
/irginia	NELAP	3	460161	06-14-14
Nashington	State Program	10	C1794	06-10-14
West Virginia DEP	State Program	3	94	06-30-14
West Virginia DHHR	State Program	3	9950C	12-31-13 *
Visconsin	State Program	5	999819810	08-31-14
Myoming	State Program	8	8TMS-L	06-30-14

<sup>\*</sup> Expired certification is currently pending renewal and is considered valid.

# Solutia Krummrich Data Review WGK LTM 1Q14

**Laboratory SDG: KPS107** 

Data Reviewer: Melissa Mansker Peer Reviewer: Elizabeth Kunkel

Date Reviewed: 3/5/2014

Guidance: USEPA National Functional Guidelines for Superfund Organic Methods Data Review 2008. USEPA National Functional Guidelines for Superfund

**Inorganic Data Review 2010** 

Work Plan: Revised Long-Term Monitoring Program (LTMP) Work Plan (Solutia

2009)

Sample Identification						
BSA-MW-2D-0214	BSA-MW-2D-F(0.2)-0214					
CPA-MW-3D-0214	CPA-MW-3D-F(0.2)-0214					
CPA-MW-3D-0214-AD	1Q14 LTM Trip Blank #2					

#### 1.0 Data Package Completeness

Were all items delivered as specified in the QAPP and COC as appropriate?

Yes

#### 2.0 Laboratory Case Narrative \ Cooler Receipt Form

Were problems noted in the laboratory case narrative or cooler receipt form?

Yes, the laboratory case narrative indicated that methane LCS/LCSD RPD was outside evaluation criteria. Nitrate, benzene, and 4-chloroaniline MS/MSD recoveries were outside evaluation criteria for sample BSA-MW-2D-0214. Samples were diluted due to high levels of target analytes. These issues are addressed further in the appropriate sections below.

The cooler receipt form indicated that one of one coolers was received by the laboratory at a temperature of 1.0°C which is outside the 4°C  $\pm$  2°C criteria. The samples were received in good condition; therefore no qualification of data was required. The cooler receipt form indicated that a pH > 2 for dissolved organic carbon in sample CPA-MW-3D-F(0.2)-0214; please see section 11.0 of this review for qualifications.

#### 3.0 Holding Times

Were samples extracted/analyzed within applicable limits?

Yes

#### 4.0 Blank Contamination

Were any analytes detected in the Method Blanks, Field Blanks or Trip Blanks?

No

#### 5.0 Laboratory Control Sample

Were LCS recoveries within evaluation criteria?

No

LCS/LCSD ID	Parameter	Analyte	LCS/LCSD Recovery	RPD	LCS/LCSD/ RPD Criteria
LCS/LCSD 680- 315441/5/6	Dissolved gases	Methane	77/106	32	75-125/30

LCS/LCSD recoveries were within evaluation criteria; samples are not qualified based on LCS/LCSD RPD alone; therefore, associated samples did not require qualification.

#### 6.0 Surrogate Recoveries

Were surrogate recoveries within evaluation criteria?

Yes

#### 7.0 Matrix Spike and Matrix Spike Duplicate Recoveries

Were MS/MSD samples collected as part of this SDG?

Yes, sample BSA-MW-2D-0214 was spiked and analyzed for VOCs, SVOCs, metals, and nitrate. Although not requested, sample CPA-MW-3D-0214 was spiked and analyzed for sulfate, and sample BSA-MW-2D-F(0.2)-0214 was spiked and analyzed for dissolved organic carbon.

Were MS/MSD recoveries within evaluation criteria?

No

MS/MSD ID	Parameter	Analyte	MS/MSD Recovery	RPD	MS/MSD/ RPD Criteria
BSA-MW-2D-0214	VOCs	Benzene	24/34	6	74-123/30
BSA-MW-2D-0214	SVOCs	4-Chloroaniline	26/19	13	42-130/50
BSA-MW-2D-0214	General chemistry	Nitrate	110/ <b>111</b>	0	90-110/10

Analytical results reported as non-detect and associated with MS/MSD recoveries above evaluation criteria, indicating a high bias, did not require qualification. USEPA National Functional Guidelines for Organic Data Review indicates that organic data does not require qualification based on MS/MSD data alone. LCS/LCSD recoveries were within evaluation criteria. No qualification of data was required.

#### 8.0 Internal Standard (IS) Recoveries

Were internal standard area recoveries within evaluation criteria?

Yes

#### 9.0 Laboratory Duplicate Results

Were laboratory duplicate samples collected as part of this SDG?

Yes, samples BSA-MW-2D-0214 and CPA-MW-3D-0214 were spiked and analyzed for

alkalinity and free carbon dioxide. Sample BSA-MW-2D-0214 was spiked and analyzed for total organic carbon.

Were laboratory duplicate sample RPDs within criteria?

Yes

#### 10.0 Field Duplicate Results

Were field duplicate samples collected as part of this SDG?

Yes

Field ID	Field Duplicate ID
CPA-MW-3D-0214	CPA-MW-3D-0214-AD

Were field duplicates within evaluation criteria?

Yes

#### 10.0 Sample Dilutions

For samples that were diluted and nondetect, were undiluted results also reported? Not applicable; analytes were detected in samples that were diluted.

#### 11.0 Additional Qualifications

Were additional qualifications applied?

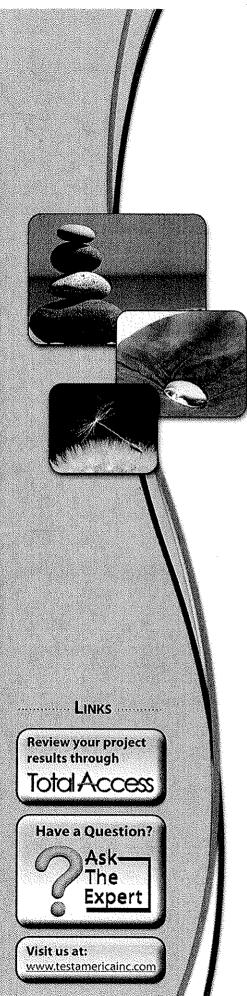
Yes, the following sample was qualified, as summarized below, due to pH > 2.

Sample ID	Parameter	Analyte	Qualification
CPA-MW-3D-F(0.2)-0214	General chemistry	Dissolved organic carbon	J

# SDG KPS107

Results of Samples from Monitoring Well:

BSA-MW-2D CPA-MW-3D



# **TestAmerica**

THE LEADER IN ENVIRONMENTAL TESTING

# **ANALYTICAL REPORT**

TestAmerica Laboratories, Inc. TestAmerica Savannah 5102 LaRoche Avenue Savannah, GA 31404 Tel: (912)354-7858

TestAmerica Job ID: 680-98328-1

TestAmerica Sample Delivery Group: KPS107

Client Project/Site: WGK Long Term Monitoring - 1Q14

For:

Solutia Inc.

575 Maryville Centre Dr. Saint Louis, Missouri 63141

Attn: Mr. Jerry Rinaldi

Michele RKusey

Authorized for release by: 2/19/2014 2:55:25 PM

Michele Kersey, Project Manager I (912)354-7858 michele.kersey@testamericainc.com

Reviewed on MAR 0 5 2014 MM

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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MAR 0 5 2014 MM

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98328-1

SDG: KPS107

Job ID: 680-98328-1

Laboratory: TestAmerica Savannah

Narrative

#### CASE NARRATIVE

Client: Solutia Inc.

Project: WGK Long Term Monitoring - 1Q14

Report Number: 680-98328-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In the event of interference or analytes present at high concentrations, samples may be diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

#### RECEIPT

The samples were received on 2/5/2014 9:46 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.0° C.

#### **VOLATILE ORGANIC COMPOUNDS (GC-MS)**

Samples BSA-MW-2D-0214 (680-98328-1), CPA-MW-3D-0214 (680-98328-3), CPA-MW-3D-0214-AD (680-98328-5) and 1Q14 LTM Trip Blank #2 (680-98328-6) were analyzed for Volatile Organic Compounds (GC-MS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 02/06/2014 and 02/07/2014.

The matrix spike / matrix spike duplicate (MS/MSD) recoveries for batch 314439 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Refer to the QC report for details.

Samples BSA-MW-2D-0214 (680-98328-1)[2000X], CPA-MW-3D-0214 (680-98328-3)[100X] and CPA-MW-3D-0214-AD (680-98328-5) [100X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No other difficulties were encountered during the volatiles analysis.

All other quality control parameters were within the acceptance limits.

#### SEMIVOLATILE ORGANIC COMPOUNDS (AQUEOUS)

Samples BSA-MW-2D-0214 (680-98328-1), CPA-MW-3D-0214 (680-98328-3) and CPA-MW-3D-0214-AD (680-98328-5) were analyzed for Semivolatile Organic Compounds (Aqueous) in accordance with EPA SW-846 Method 8270D. The samples were prepared on 02/06/2014 and analyzed on 02/08/2014.

4-Chloroaniline exceeded the recovery criteria low for the MS and MSD of sample BSA-MW-2D-0214 (680-98328-1) in batch 680-314717.

Refer to the QC report for details.

No other difficulties were encountered during the semivolatiles analysis.

All other quality control parameters were within the acceptance limits.

#### **DISSOLVED GASES**

Samples BSA-MW-2D-0214 (680-98328-1) and CPA-MW-3D-0214 (680-98328-3) were analyzed for dissolved gases in accordance with RSK-175. The samples were analyzed on 02/13/2014.

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TestAmerica Savannah

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Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98328-1

SDG: KPS107

Job ID: 680-98328-1 (Continued)

Laboratory: TestAmerica Savannah (Continued)

Methane (TCD) exceeded the RPD limit for LCSD 680-315441/6. Refer to the QC report for details.

No other difficulties were encountered during the dissolved gases analysis.

All other quality control parameters were within the acceptance limits.

#### METALS (ICP)

Samples BSA-MW-2D-F(0.2)-0214 (680-98328-2) and CPA-MW-3D-F(0.2)-0214 (680-98328-4) were analyzed for Metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared on 02/06/2014 and analyzed on 02/07/2014.

No difficulties were encountered during the metals analysis.

All quality control parameters were within the acceptance limits.

#### METALS (ICP)

Samples BSA-MW-2D-0214 (680-98328-1) and CPA-MW-3D-0214 (680-98328-3) were analyzed for Metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared on 02/06/2014 and analyzed on 02/07/2014.

No difficulties were encountered during the metals analysis.

All quality control parameters were within the acceptance limits.

#### **ALKALINITY**

Samples BSA-MW-2D-0214 (680-98328-1) and CPA-MW-3D-0214 (680-98328-3) were analyzed for alkalinity in accordance with EPA Method 310.1. The samples were analyzed on 02/07/2014 and 02/09/2014.

No difficulties were encountered during the alkalinity analysis.

All quality control parameters were within the acceptance limits.

#### CHLORIDE

Samples BSA-MW-2D-0214 (680-98328-1) and CPA-MW-3D-0214 (680-98328-3) were analyzed for Chloride in accordance with EPA Method 325.2. The samples were analyzed on 02/06/2014.

Samples BSA-MW-2D-0214 (680-98328-1)[5X] and CPA-MW-3D-0214 (680-98328-3)[10X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No other difficulties were encountered during the chloride analysis.

All other quality control parameters were within the acceptance limits.

#### NITRATE-NITRITE AS NITROGEN

Samples BSA-MW-2D-0214 (680-98328-1) and CPA-MW-3D-0214 (680-98328-3) were analyzed for nitrate-nitrite as nitrogen in accordance with EPA Method 353.2. The samples were analyzed on 02/05/2014.

The matrix spike / matrix spike duplicate (MS/MSD) recoveries for batch 314406 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Refer to the QC report for details.

No other difficulties were encountered during the nitrate-nitrite analysis.

All other quality control parameters were within the acceptance limits.

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TestAmerica Savannah

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Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98328-1

SDG: KPS107

#### Job ID: 680-98328-1 (Continued)

Laboratory: TestAmerica Savannah (Continued)

#### SULFATE

Samples BSA-MW-2D-0214 (680-98328-1) and CPA-MW-3D-0214 (680-98328-3) were analyzed for sulfate in accordance with EPA Method 375.4. The samples were analyzed on 02/06/2014.

Sample CPA-MW-3D-0214 (680-98328-3)[10X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No difficulties were encountered during the sulfate analysis.

All quality control parameters were within the acceptance limits.

#### **TOTAL ORGANIC CARBON**

Samples BSA-MW-2D-0214 (680-98328-1) and CPA-MW-3D-0214 (680-98328-3) were analyzed for total organic carbon in accordance with EPA Method 415.1. The samples were analyzed on 02/06/2014.

No difficulties were encountered during the TOC analysis.

All quality control parameters were within the acceptance limits.

#### **DISSOLVED ORGANIC CARBON (DOC)**

Samples BSA-MW-2D-F(0.2)-0214 (680-98328-2) and CPA-MW-3D-F(0.2)-0214 (680-98328-4) were analyzed for Dissolved Organic Carbon (DOC) in accordance with EPA Method 415.1. The samples were analyzed on 02/07/2014.

No difficulties were encountered during the DOC analysis.

All quality control parameters were within the acceptance limits.

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TestAmerica Savannah

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# **Sample Summary**

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98328-1

SDG: KPS107

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-98328-1	BSA-MW-2D-0214	Water	02/04/14 10:45	02/05/14 09:46
680-98328-2	BSA-MW-2D-F(0.2)-0214	Water	02/04/14 10:45	02/05/14 09:46
680-98328-3	CPA-MW-3D-0214	Water	02/04/14 12:40	02/05/14 09:46
680-98328-4	CPA-MW-3D-F(0.2)-0214	Water	02/04/14 12:40	02/05/14 09:46
680-98328-5	CPA-MW-3D-0214-AD	Water	02/04/14 12:40	02/05/14 09:46
680-98328-6	1Q14 LTM Trip Blank #2	Water	02/04/14 00:00	02/05/14 09:46





















MAR 0 6 2014

#### **Method Summary**

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98328-1

SDG: KPS107

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL SAV
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	TAL SAV
RSK-175	Dissolved Gases (GC)	RSK	TAL SAV
6010C	Metals (ICP)	SW846	TAL SAV
310.1	Alkalinity	MCAWW	TAL SAV
325.2	Chloride	MCAWW	TAL SAV
353.2	Nitrogen, Nitrate-Nitrite	MCAWW	TAL SAV
375.4	Sulfate	MCAWW	TAL SAV
415.1	TOC	MCAWW	TAL SAV
415.1	DOC	MCAWW	TAL SAV

#### Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

RSK = Sample Prep And Calculations For Dissolved Gas Analysis In Water Samples Using A GC Headspace Equilibration Technique, RSKSOP-175,

Rev. 0, 8/11/94, USEPA Research Lab

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

#### Laboratory References

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

MAR 0 5 2014

#### Definitions/Glossary

	Definitions/Glossary
Client: Solutia	·
Project/Site: V	NGK Long Term Monitoring - 1Q14 SDG: KPS10
Qualifiers	
GC/MS VOA	
Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
F1	MS and/or MSD Recovery exceeds the control limits
GC/MS Semi	•
Qualifier	Qualifier Description Indicates the analyte was analyzed for but not detected.
F1	MS and/or MSD Recovery exceeds the control limits
	AND AND THE DYCKY EXCECTS THE CONTROL WITHOUT
GC VOA	
, Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
•	RPD of the LCS and LCSD exceeds the control limits
Metals	
Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
General Cher	mistry
Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
F1	MS and/or MSD Recovery exceeds the control limits
Glossary	•
Abbanistian	
Abbreviation	These commonly used abbreviations may or may not be present in this report.  Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points

MAR 0 5 2014

TEF

TEQ

Toxicity Equivalent Factor (Dioxin)

Toxicity Equivalent Quotient (Dioxin)

#### **Detection Summary**

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98328-1

Lab Sample ID: 680-98328-2

Lab Sample ID: 680-98328-3

Lab Sample ID: 680-98328-4

Lab Sample ID: 680-98328-5

SDG: KPS107

#### Lab Sample ID: 680-98328-1 Client Sample ID: BSA-MW-2D-0214

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	130000		2000		ug/L	2000		8260B	Total/NA
1,4-Dioxane	16		10		ug/L	1		8270D	Total/NA
Ethane	11		1.1		ug/L	1		RSK-175	Total/NA
Methane (TCD)	8700	•	390		ug/L	1		RSK-175	Total/NA
Iron	3.5		0.050		mg/L	1		6010C	Total
Manganese	0,56		0.010		mg/L	1		6010C	Recoverable Total
Chloride	100		5.0		mg/L	5		325,2	Recoverable Total/NA
Total Organic Carbon	6.8		1.0		mg/L	1		415.1	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Alkalinity	730		5.0	-,	mg/L	1	_	310.1	Total/NA
Carbon Dioxide, Free	46		5.0		mg/L	1		310.1	Total/NA

#### Client Sample ID: BSA-MW-2D-F(0.2)-0214

	V 10-10-11								
Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron, Dissolved	3.5		0.050		mg/L	1		6010C	Dissolved
Manganese, Dissolved	0.56		0.010		mg/L	1		6010C	Dissolved
Dissolved Organic Carbon	6.3		1.0		mg/L	1		415.1	Dissolved

#### Client Sample ID: CPA-MW-3D-0214

Shelit Salliple ID. CFA-IN	**************************************							oampic ib	. 000-00020-0
Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
8enzene	13000		100		ug/L	100	_	8260B	Total/NA
Chlorobonzene	270		100		ug/L	100		8260B	Total/NA
4-Chloroaniline	32		20		ug/L	1		8270D	Total/NA
Ethane	22		1.1		ug/L	1		RSK-175	Total/NA
Methane (TCD)	18000	•	390		ug/L	1		RSK-175	Total/NA
Iron	12		0.050		mg/L	1		6010C	Total
									Recoverable
Manganese	0.78		0.010		mg/L	1		6010C	Total
									Recoverable
Chloride	350		10		mg/L	10		325.2	Total/NA
Total Organic Carbon	9.2		1.0		mg/L	1		415.1	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Alkalinity	590		5.0		mg/L	1	-	310.1	Total/NA
Carbon Dioxide, Free	6.1		5.0		mg/L	1		310.1	Total/NA

#### Client Sample ID: CPA-MW-3D-F(0.2)-0214

****									
Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Ргер Туре
Iron, Dissofved	12		0.050		mg/L	1		6010C	Dissolved
Manganese, Dissolved	0.79	_	0.010		mg/L	1		6010C	Dissolved
Dissolved Organic Carbon	8.4	J	1.0		mg/L	1		415.1	Dissolved

#### Client Sample ID: CPA-MW-3D-0214-AD

	Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type	
-	Benzene	14000		100	***************************************	ug/L	100		8260B	Total/NA	
1	Chlorobenzene	290		100		ug/L	100		8260B	Total/NA	

This Detection Summary does not include radiochemical test results.

#### **Detection Summary**

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98328-1

SDG: KPS107

Client Sample ID: CPA-MW-3D-0214-AD (Continued)

Lab Sample ID: 680-98328-5

Analyte		Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
4-Chloroaniline	29		21		ug/L	1	••••	8270D	Total/NA

Client Sample ID: 1Q14 LTM Trip Blank #2 Lab Sample ID: 680-98328-6

No Detections.

MAR U 5 2014 MM

This Detection Summary does not include radiochemical test results.

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98328-1

SDG: KPS107

Client Sample ID: BSA-MW-2D-0214

Date Collected: 02/04/14 10:45 Date Received: 02/05/14 09:46 Lab Sample ID: 680-98328-1

Matrix: Water

Method: 8260B - Volatile Org Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Benzene	130000	Quantitet	2000		ug/L	<del>-</del>	Trepared	02/06/14 15:14	200
Chlorobenzene	2000	П	2000		ug/L			02/06/14 15:14	200
1.2-Dichlorobenzene	2000		2000		ug/L			02/06/14 15:14	200
1,3-Dichlorobenzene	2000	U	2000		ug/L			02/06/14 15:14	200
1,4-Dichlorobenzene	2000		2000		-			02/06/14 15:14	200
1,4-Did Bolobelizerie	2000	U	2000		ug/L			02/00/14 15.14	200
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
4-Bromofluorobenzene	102	V/41/4V	70 - 130					02/06/14 15:14	200
Dibromofluoromethan <b>e</b>	113		70 - 130					02/06/14 15:14	200
Toluene-d8 (Surr)	99		70 - 130					02/06/14 15:14	200
Method: 8270D - Semivolatil	e Organic Compou	nds (GC/MS	S)						
Analyte	-	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
2-Chlorophenol	10	Ü	10		ug/L		02/06/14 15:30	02/08/14 00:21	
1,4-Dioxane	16		10		ug/L		02/06/14 15:30	02/08/14 00:21	
1,2,4-Trichlorobenzene	10	U	10		ug/L		02/06/14 15:30	02/08/14 00:21	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil F
-Fluorobi <b>p</b> henyl	56		38 - 130				02/06/14 15:30	02/08/14 00:21	***************************************
2-Fluorophenol	50		25 - 130				02/06/14 15:30	02/08/14 00:21	
Vitrobenzene-d5	61		39 - 130				02/06/14 15:30	02/08/14 00:21	
Phenol-d5	51		25 - 130				02/06/14 15:30	02/08/14 00:21	
Terphenyl-d14	31		10 - 143				02/06/14 15:30	02/08/14 00:21	
2,4,6-Tribromophenol	55		31 - 141				02/06/14 15:30	02/08/14 00:21	
Method: RSK-175 - Dissolve	d Gases (GC)								
Analyte	• •	Qualifier	RL	MOL	Unit	D	Prepared	Analyzed	Dil Fa
Ethane	11		1.1	to the eventual terms	ug/L			02/13/14 15:42	
Ethylene	1.0	U	1.0		ug/L			02/13/14 15:42	
Methane (TCD)	8700	•	390		ug/L			02/13/14 15:42	
Method: 6010C - Metals (ICP	) - Total Recoverat	ole							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil F
ron	3.5		0.050		mg/L		02/06/14 10:07	02/07/14 02:58	
Manganese	0.56		0.010		mg/L		02/06/14 10:07	02/07/14 02:58	
General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil F
Chloride	100		5.0	CONTRACT CONTRACTOR CO	mg/L			02/06/14 11:56	
Vitrate as N	0.050	U	0.050		mg/L			02/05/14 17:04	
Sulfate	5.0	U	5.0		mg/L			02/06/14 14:07	
Total Organic Carbon	8,8		1.0		mg/L			02/06/14 21:41	
Analyte	Result	Qualifier	RL	RL	Unit	<u>.</u> D	Prepared	Analyzed	Dil F
Alkalinity	730		5,0		mg/L			02/07/14 15:43	
Carbon Dioxide, Free	46		5.0		mg/L			02/07/14 15:43	

MAR 0 5 2014

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98328-1

SDG: KPS107

Client Sample ID: BSA-MW-2D-F(0.2)-0214

Date Collected: 02/04/14 10:45 Date Received: 02/05/14 09:46 Lab Sample ID: 680-98328-2

Matrix: Water

Analyte	Doguđe	Qualifier	RL	MDL	Unit		Dunnarad	A maken a	D# C
Analyte	Resun	Quanter	KL	MDL	Unit	U	Prepared	Analyzed	Dil Fac
Iron, Dissolved	3.5	-	0.050		mg/L		02/06/14 10:07	02/07/14 <b>0</b> 3:23	1
Manganese, Dissolved	0.56		0.010		mg/L		02/06/14 10:07	02/07/14 03:23	1
General Chemistry - Dissolved									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	6.3		1.0		mg/L			02/07/14 16:50	1

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MAR 0 5 201

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98328-1

SDG: KPS107

Client Sample ID: CPA-MW-3D-0214

Date Collected: 02/04/14 12:40 Date Received: 02/05/14 09:46 Lab Sample ID: 680-98328-3

Matrix: Water

Method: 8260B - Volatile On Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	13000	1	100		ug/L			02/06/14 15:44	100
Chlorobenzene	270		100		ug/L			02/06/14 15:44	100
1,2-Dichlorobenzene	100	ប	100		ug/L			02/06/14 15:44	100
1,3-Dichlorobenzene	100	ប	100		ug/L			02/06/14 15:44	100
1,4-Dichlorobenzene	100	U	100		ug/L			02/06/14 15:44	100
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	100		70 - 130					02/06/14 15:44	100
Dibromofluoromethane	118		70 - 130					02/06/14 15:44	100
Toluene-d8 (Surr)	101		70 - 130					02/06/14 15:44	100
Method: 8270D - Semivolat	ile Organic Compou	inds (GC/M	S)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chloroaniline	32	* *************************************	20		ug/L		02/06/14 15:30	02/08/14 00:46	1
1 Omorouming									

10 U	10	ug/L	00/00/44 45:00		
		ug/L	02/06/14 15:30	02/08/14 00:46	1
ery Qualifier	Limits		Prepared	Analyzed	Dil Fac
73	38 _ 130		02/06/14 15:30	02/08/14 00:46	7
67	25 - 130		02/06/14 15:30	02/08/14 00:46	1
82	39 . 130		02/06/14 15:30	02/08/14 00:46	1
77	25 - 130		02/06/14 15:30	02/08/14 00:46	1
67	10 - 143		02/06/14 15:30	02/08/14 00:46	1
75	31 - 141		02/06/14 15:30	02/08/14 00:46	1
	67 82 77 67	73 38 - 130 67 25 - 130 82 39 - 130 77 25 - 130 67 10 - 143	73 38 - 130 67 25 - 130 82 39 - 130 77 25 - 130 67 10 - 143	73     38 - 130     02/06/14 15:30       67     25 - 130     02/06/14 15:30       82     39 - 130     02/06/14 15:30       77     25 - 130     02/06/14 15:30       67     10 - 143     02/06/14 15:30	73         38 - 130         02/06/14 15:30         02/08/14 00:46           67         25 - 130         02/06/14 15:30         02/08/14 00:46           82         39 - 130         02/06/14 15:30         02/08/14 00:46           77         25 - 130         02/06/14 15:30         02/08/14 00:46           67         10 - 143         02/06/14 15:30         02/08/14 00:46

Method: RSK-175 - Dissolve	d Gases (GC)								
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	22		1.1		ug/L		***	02/13/14 15:55	1
Ethylene	1.0	U	1.0		ug/L			02/13/14 15:55	1
Methane (TCD)	18000	•	390		ug/L			02/13/14 15:55	1
Method: 6010C - Metals (iCP	) - Total Recoverab	ole							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	12		0.050	. 41 F80000 4 400800 448 800 800000	mg/L		02/06/14 10:07	02/07/14 03:28	1
Manganese	0.78		0.010		mg/L		02/06/14 10:07	02/07/14 03:28	1

General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	350		10		mg/L			02/06/14 11:56	10
Nitrate as N	0.050	ប	0.050		mg/L			02/05/14 17:07	1
Sulfate	50	U	50		mg/L			02/06/14 14:27	10
Total Organic Carbon	9.2		. 1.0		mg/L			02/06/14 22:06	1
Analyte	Result	Qualifier	RL	RL	Unit	Ð	Prepared	Analyzed	Dil Fac
Alkalinity	590	APAIL & Liberton of Prince and Architecture	5.0	·	mg/L			02/09/14 09:42	1
Carbon Dioxide, Free	6.1		5.0		mg/L			02/09/14 09:42	1

MAR 0 6 2014

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98328-1

SDG: KPS107

Client Sample ID: CPA-MW-3D-F(0.2)-0214

Date Collected: 02/04/14 12:40 Date Received: 02/05/14 09:46

Dissolved Organic Carbon

Lab Sample ID: 680-98328-4

02/07/14 17:33

Matrix: Water

1	Method: 6010C - Metals (ICP) - Dissolve	d								
- Company	Analyte	Result	Qualifier	RL.	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Iron, Dissolved	12		0.050		mg/L	 	02/06/14 10:07	02/07/14 03:33	1
ě,	Manganese, Dissolved	0.79		0.010		mg/L		02/06/14 10:07	02/07/14 03:33	1
,	General Chemistry - Dissolved Analyte	Result	Qualifier	RL	MDL.	Unit	D	Prepared	Analyzed	Dil Fac

1,0

mg/L

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MAR 0 5 2014

TestAmerica Savannah

Client: Solutia Inc.

Terphenyl-d14

2,4,6-Tribromophenol

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98328-1

SDG: KPS107

Client Sample ID: CPA-MW-3D-0214-AD

Date Collected: 02/04/14 12:40 Date Received: 02/05/14 09:46 Lab Sample ID: 680-98328-5

02/06/14 15:30

02/08/14 01:10

02/06/14 15:30 02/08/14 01:10

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	14000	POR EL ANDRONOMINATION PROPERTY DESIGNATION AND ADDRESS.	100		ug/L			02/07/14 14:27	100
Chlorobenzene	290		100		ug/L			02/07/14 14:27	100
1,2-Dichlorobenzene	100	U	100		ug/L			02/07/14 14:27	100
1,3-Dichforobenzene	100	U	100		ug/L			02/07/14 14:27	100
1,4-Dichlorobenzene	100	U	100		ug/L			02/07/14 14:27	100
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	102		70 - 130					02/07/14 14:27	100
Dibromofluoromethane	120		70 - 130					02/07/14 14:27	100
Toluene-d8 (Surr)	108		70 - 130					02/07/14 14:27	100

Method: 62/0D - Semivolatile	e Organic Compou	nas (GC/M	<b>5</b> }						
Analyte	Result	Qualifier	RL	MDL I	Unit	D	Prepared	Analyzed	Dil Fac
4-Chloroaniline	29		21		មg/L		02/06/14 15:30	02/08/14 01:10	1
2-Chlorophenol	11	U	11	·	ug/L		02/06/14 15:30	02/08/14 01:10	1
1,2,4-Trichlorobenzene	11	υ	11	٤	មg/L		02/06/14 15:30	02/08/14 01:10	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	72	/11/1	38 - 130				02/06/14 15:30	02/08/14 01:10	1
2-Fluorophenol	69		25 . 130				02/06/14 15:30	02/08/14 01:10	1
Nitrobenzene-d5	78	,	39 - 130	4			02/06/14 15:30	02/08/14 01:10	1
Phenol-d5	71		25 - 130				02/06/14 15:30	02/08/14 01:10	1

10-143

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MAR 0 5 2014

Client: Solutia Inc.

1,4-Dichlorobenzene

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98328-1

SDG: KPS107

Client Sample ID: 1Q14 LTM Trip Blank #2

Date Collected: 02/04/14 00:00 Date Received: 02/05/14 09:46 Lab Sample ID: 680-98328-6

02/06/14 17:12

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) RL MDL D Prepared Analyzed Dil Fac Unit Benzene 1.0 U 1.0 ug/L 02/06/14 17:12 ug/L Chlorobenzene 1.0 U 1.0 02/06/14 17:12 1,2-Dichlorobenzene ug/L 02/06/14 17:12 1.0 U 1.0 02/06/14 17:12 1,3-Dichlorobenzene 1.0 ប 1.0 ug/L

1.0 U

	Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
	4-Bromofluorobenzene	99		70 - 130	attellieritti kanada aanaa aanaa kanada aanaa aanaa aanaa aanaa aanaa aanaa aanaa aanaa aanaa aanaa aanaa aana	02/06/14 17:12	1
	Dibromofluoromethane	111		70 - 130		02/06/14 17:12	1 .
-	Toluene-d8 (Surr)	99		70 - 130		02/06/14 17:12	1

1.0

ug/L

MAR 0 8 2014

#### **Surrogate Summary**

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98328-1

SDG: KPS107

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID         Client Sample ID         {70-130}         TOL           680-98328-1         BSA-MW-2D-0214         102         113         99           680-98328-1 MS         BSA-MW-2D-0214         104         105         103           680-98328-1 MSD         BSA-MW-2D-0214         106         109         106           680-98328-3         CPA-MW-3D-0214         100         118         101           680-98328-5         CPA-MW-3D-0214-AD         102         120         108           680-98328-6         1Q14 LTM Trip Blank #2         99         111         99           LCS 680-314439/4         Lab Control Sample         106         106         106           LCS 680-314624/4         Lab Control Sample         117         116         124
580-98328-1       BSA-MW-2D-0214       102       113       99         580-98328-1 MS       BSA-MW-2D-0214       104       105       103         580-98328-1 MSD       BSA-MW-2D-0214       106       109       106         580-98328-3       CPA-MW-3D-0214       100       118       101         580-98328-5       CPA-MW-3D-0214-AD       102       120       108         580-98328-6       1Q14 LTM Trip Blank #2       99       111       99         CC 680-314439/4       Lab Control Sample       106       106       106
680-98328-1 MS       BSA-MW-2D-0214       104       105       103         680-98328-1 MSD       BSA-MW-2D-0214       106       109       106         680-98328-3       CPA-MW-3D-0214       100       118       101         680-98328-5       CPA-MW-3D-0214-AD       102       120       108         680-98328-6       1Q14 LTM Trip Blank #2       99       111       99         .CS 680-314439/4       Lab Control Sample       106       106       106
680-98328-1 MSD       BSA-MW-2D-0214       106       109       106         680-98328-3       CPA-MW-3D-0214       100       118       101         680-98328-5       CPA-MW-3D-0214-AD       102       120       108         680-98328-6       1Q14 LTM Trip Blank #2       99       111       99         LCS 680-314439/4       Lab Control Sample       106       106       106
680-98328-3       CPA-MW-3D-0214       100       118       101         680-98328-5       CPA-MW-3D-0214-AD       102       120       108         680-98328-6       1Q14 LTM Trip Blank #2       99       111       99         LCS 680-314439/4       Lab Control Sample       106       106       106
680-98328-5         CPA-MW-3D-0214-AD         102         120         108           680-98328-6         1Q14 LTM Trip Blank #2         99         111         99           LCS 680-314439/4         Lab Control Sample         106         106         106
580-98328-6 1Q14 LTM Trip Blank #2 99 111 99 .CS 680-314439/4 Lab Control Sample 106 106 106
.CS 680-314439/4 Lab Control Sample 106 106 106
= " - " · · · · · · · · · · · · · · · · ·
_CS 680-314624/4 Lab Control Sample 117 136 124
.CSD 680-314439/5 Lab Control Sample Dup 103 103 104
.CSD 680-314624/5 Lab Control Sample Dup 115 116 120
MB 680-314439/8 Method Blank 99 112 96
MB 680-314624/9 Method Blank 101 119 107

BFB = 4-Bromofluorobenzene

DBFM = Dibromofluoromethane

TOL = Toluene-d8 (Surr)

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)								
		FBP	2FP	NBZ	PHL	TPH	TBP			
Lab Sample ID	Cilent Sample ID	(38-130)	(25-130)	(39-130)	(25-130)	(10-143)	(31-141)			
680-98328-1	BSA-MW-2D-0214	56	50	61	51	31	55			
680-98328-1 MS	BSA-MW-2D-0214	61	56	64	61	54	68			
680-98328-1 MSD	BSA-MW-2D-0214	63	63	69	64	62	72			
680-98328-3	CPA-MW-3D-0214	73	67	82	77	67	75			
680-98328-5	CPA-MW-3D-0214-AD	72	69	78	71	60	71			
LCS 680-314294/7-A	Lab Control Sample	76	68	78	73	80	80			
MB 680-314294/6-A	Method Blank	69	61	81	53	74	76			

Surrogate Legend

FBP = 2-Fluorobiphenyl

2FP = 2-Fluorophenol

NBZ = Nitrobenzene-d5

PHL = Phenoi-d5

TPH = Terphenyl-d14

TBP ≈ 2,4,6-Tribromophenol

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98328-1

SDG: KPS107

#### Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 680-314439/8

Matrix: Water

Analysis Batch: 314439

Client Sample ID: Method Blank	(
Prep Type: Total/NA	

	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	Ü	1.0		ug/L			02/06/14 12:47	1
Chlorobenzene	1.0	U	1.0		ug/L			02/06/14 12:47	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			02/06/14 12:47	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			02/06/14 12:47	1
1,4-Dichlorobenzene	1.0	บ	1.0		ug/L			02/06/14 12:47	1

MB MB Surrogate %Recovery Qualifier Limits Prepared Analyzed Dil Fac 4-Bromofluorobenzene 99 70 - 130 02/06/14 12:47 Dibromofluoromethane 112 70 - 130 02/06/14 12:47 Toluene-d8 (Surr) 70 - 130 02/06/14 12:47 96

Lab Sample ID: LCS 680-314439/4 Client Sample ID: Lab Control Sample Matrix: Water Prep Type: Total/NA

Analysis Batch: 314439

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	50.0	51.9	EASTER COURT A COURT STATE	ug/L		104	74 - 123	
Chlorobenzene	50.0	52.2		ug/L		104	79 120	
1,2-Dichlorobenzene	. 50.0	53.4		ug/L		·107	77 - 124	
1,3-Dichlorobenzene	50.0	53.8		ug/L		108	79 123	
1,4-Dichlorobenzene	50.0	52.8		ug/L		106	76 . 124	

LCS LCS Surrogate %Recovery Qualifier Limits 4-Bromofluorobenzene 106 70 - 130 Dibromofluoromethane 106 70.130 Toluene-d8 (Surr) 70 - 130 106

Lab Sample ID: LCSD 680-314439/5 Client Sample ID: Lab Control Sample Dup Matrix: Water

Analysis Batch: 314439

•	Spike	LCSD	LCSD				%Rec.		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	50.0	51.0		ug/L		102	74 - 123	2	30
Chlorobenzene	50.0	51.4		ug/L		103	79 120	2	30
1,2-Dichlorobenzene	50.0	53.0		ug/L		106	77 - 124	1	30
1,3-Dichlorobenzene	50.0	52,9		ug/L		106	79 . 123	2	30
1,4-Dichlorobenzene	50.0	51.7		ug/L		103	76 - 124	2	30

	LCSD	LC\$D	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene	103		70 - 130
Dibromofluoromethane	103		70 - 130
Toluene-d8 (Surr)	104		70 - 130

TestAmerica Savannah

Prep Type: Total/NA

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Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98328-1

SDG: KPS107

#### Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 680-98328-1 MS

Matrix: Water

Client Sample ID: BSA-MW-2D-0214	٠
Prep Type: Total/NA	

Analysis Batch: 314439									
	Sample	Sample	Spike	MS	MS				%Rec.
Analyte	Result	Qualifier	Added	Resuit	Qualifier	Unit	D	%Rec_	Limits
Benzene	130000		100000	153000	F1	ug/L		(24)	74 - 123
Chlorobenzene	2000	U	100000	103000		ug/L		102	79 - 120
1,2-Dichlorobenzene	2000	U	100000	105000		ug/L		105	77 - 124
1,3-Dichlorobenzene	2000	υ	100000	106000		ug/L		106	79 - 123
1,4-Dichlorobenzeле	2000	U	100000	103000		ug/L		103	76 - 124
	MS	MS							
Surrogate	%Recovery	Qualifier	Limits						
4 December and	404		70 420						

4-Bromofluorobenzene 70 - 130 104 Dibromofluoromethane 105 70 - 130 Toluene-d8 (Surr) 103 70 - 130

Lab Sample ID: 680-98328-1 MSD

Matrix: Water

Analysis Batch: 314439

Client Sample ID: BSA-MW-2D-0214

Prep Type: Total/NA

	•	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Ana	alyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Ber	nzene	130000		100000	163000	F1	ug/L	_	(34)	74 - 123	6	30
Chi	orobenzene	2000	U	100000	105000		ug/L		105	79 - 120	3	30
1,2	-Dichlorobenzene	`2000	U	100000	107000		ug/L		107	77 - 124	2	30 ·
1,3-	Dichlorobenzene	2000	U	100000	108000		ug/L		108	79 - 123	2	30
1,4-	-Dichlorobenzene	2000	U	100000	105000		ug/L		105	76 - 124	2	30

MSD MSD Surrogate %Recovery Qualifier 4-Bromofluorobenzene 106 70 - 130 Dibromofluoromethane 109 70 - 130 Toluene-d8 (Surr) 70 - 130 106

Lab Sample ID: MB 680-314624/9

Matrix: Water

Analysis Batch: 314624

Client Sample ID: Method Blank

Prep Type: Total/NA

		MB	MB							
-	Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Benzene	1.0	Ū	1.0		ug/L			02/07/14 13:28	1
	Chlorobenzene	1.0	U	1.0		ug/L			02/07/14 13:28	1
	1,2-Dichlorobenzene	1.0	U	1.0		ւց/L			02/07/14 13:28	1
-	1,3-Dichlorobenzene	1.0	U	1.0		ug/L			02/07/14 13:28	1
-	1,4-Dichlorobenzene	1.0	U	1.0		ug/L			02/07/14 13:28	1
-										

		мв	MB				
-	Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
	4-Bromofluorobenzene	101		70 - 130		02/07/14 13:28	1
	Dibromofluoromethane	119		70 - 130		02/07/14 13:28	1
· January	Toluene-d8 (Surr)	107		70 - 130		02/07/14 13:28	1

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98328-1

SDG: KPS107

#### Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 680-314624/4

Matrix: Water

Analysis Batch: 314624

Client Sample ID	: Lab Control Sample
	Prep Type: Total/NA

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	50.0	60.9	Laboration of the Contract of	ug/L		122	74 - 123	
Chlorobenzene	50.0	57.8		ug/L		116	79 - 120	
1,2-Dichlorobenzene	50.0	56,8		ug/L		114	77 - 124	
1,3-Dichlorobenzene	50.0	59.9		ug/L		120	79 - 123	
1,4-Dichlorobenzene	50.0	58.5		ug/L		117	76 - 124	

	LCS LCS	
Surrogate	%Recovery Qualifier	Limits
4-Bromofluorobenzeле	117	70 - 130
Dibromofluoromethane	116	70 - 130
Toluene-d8 (Surr)	124	70 - 130

Lab Sample ID: LCSD 680-314624/5

Matrix: Water

Analysis Batch: 314624

Client Sample ID: Lab	Control Sample Dup
	Pren Type: Total/NA

		Spike	LCSD	LCSD				%Rec.		RPD
Analyte		Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	TOTAL VANORATE BOOK VANORATE SEASON S	50.0	58.1	TORROS CONCERS PRODUCTS	ug/L		116	74 - 123	5	30
Chlorobenzene		50.0	57.2		ug/L		114	79 - 120	1	30
1,2-Dichlorobenzene	•	50.0	56.3		ug/L		113	77 - 124	1	∙30
1,3-Dichlorobenzene		50.0	58.2		ug/L		116	79 - 123	3	30
1,4-Dichlorobenzene		50.0	56.7		ug/L		113	76 - 124	3	30

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobeлzene	115	*****************	70 - 130
Dibromofluoromethane	116		70 <sub>-</sub> 130
Toluene-d8 (Surr)	120		70 - 130

#### Method: 8270D - Semivolatile Organic Compounds (GC/MS)

- (*									
-	Lab Sample ID: MB 680-314294/6-A						Client Samp	le ID: Method	Blank
-	Matrix: Water						F	rep Type: To	tal/NA
	Analysis Batch: 314885							Prep Batch: 3	314294
	MB	MB	•						
-	Analyte Result	Qualifier	RI	MOL	Unit	D	Prepared	Analyzed	Dil Fac

÷										
	Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	4-Chloroaniline	20	U	20		ug/L		02/06/14 15:30	02/10/14 15:07	1
	2-Chlorophenol	10	ប	10		ug/L		02/06/14 15:30	02/10/14 15:07	1
Contraction of the Contraction o	1,4-Dioxane	10	U	10		ug/L		02/06/14 15:30	02/10/14 15:07	1
1	1,2,4-Trichlorobenzene	10	U	10		ug/L		02/06/14 15:30	02/10/14 15:07	1
Actual Control		мв	MB							

į	,,,,,	,,,,,,				
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	69		38 - 130	02/06/14 15:30	02/10/14 15:07	1
2-Fluorophenol	61		25.130	02/06/14 15:30	02/10/14 15:07	1
Nitrobenzene-d5	81		39 - 130	02/06/14 15:30	02/10/14 15:07	1
Phenol-d5	53		25 - 130	02/06/14 15:30	02/10/14 15:07	1
Terphenyl-d14	74		10 - 143	02/06/14 15:30	02/10/14 15:07	1
2,4,6-Tribromophenol	76		31 - 141	02/06/14 15:30	02/10/14 15:07	1

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98328-1

SDG: KPS107

#### Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 680-314 Matrix: Water Analysis Batch: 314717	294/7-A						Client	: Sample		trol Sample be: Total/NA itch: 314294
			Spike	LCS	LCS				%Rec.	
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits	
4-Chloroaniline	A Control of the Cont		100	55.8		ug/L		56	42 - 130	
2-Chlorophenol			100	72.8		ug/L		73	57 - 130	
1,4-Dioxane			100	59.0		ug/L		59	35 - 130	
1,2,4-Trichlorobenzene			100	56.3		ug/L		56	42 - 130	
	LCS	LCS								
Surrogate	%Recovery	Qualifier	Limits							
2-Fluorobiphenyl	76	•	38 - 130							
2-Fluorophenol	68		25 - 130							
Nitrobenzene-d5	78		39 _ 130							
Phenol-d5	73		25 - 130							
Terphenyl-d14	80		10 - 143							
2,4,6-Tribromophenol	80		31 - 141							

Lab Sample ID: 680-98328-1 MS

Matrix: Water

Analysis Batch: 314717

Client Sample ID: BSA-MW-2D-0214

Prep Type: Total/NA Pren Batch: 314294

Analysis Dalcii. 314717										Fieh D	3(CII. 314294
\$	Sample	Sample	Spike	MS	MS					%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit		D	%Rec_	Limits	
4-Chloroaniline	· 34		98.2	59.1	F1	ug/L	•		(26)	42 - 130	
2-Chlorophenol	10	U	98.2	63.3		ug/L			64	57 - 130	
1,4-Dioxane	16		98.2	69.1		ug/L			54	35 - 130	
1,2,4-Trichlorobenzene	10	U	98.2	45.8		ug/L			47	42 - 130	
	MS	MS									
Surrogate	%Recovery	Qualifier	Limits								
2-Fluorobipheлуl	61	B/// 0-1 B-0-4 A-0-1 A-0	38 - 130								

Surrogate	%Recovery	Qualifier	Limits
2-Fluorobiphenyl	61	\$7/10-Table Annotation and an annotation and ann	38 - 130
2-Fluorophenol	56		25 - 130
Nitrobenzene-d5	64		39 . 130
Phenol-d5	61		25 - 130
Terphenyl-d14	54		10 - 143
2,4,6-Tribromophenol	68		31 - 141

Lab Sample ID: 680-98328-1 MSD

Matrix: Water

Analysis Batch: 314717

Client Sample ID: BSA-MW-2D-0214

Prep Type: Total/NA

Prep Batch: 314294

Sample Sample Spike MSD MSD %Rec. RPD Analyte Result Qualifier Added Result Qualifier Unit Limits Limit 4-Chloroaniline 34 98.3 52.0 F1 ug/L 19 42 - 130 13 50 2-Chiorophenol 70 57 - 130 10 U 98.3 68.5 ug/L В 50 1,4-Dioxane 60 98.3 35 - 130 8 16 74.5 ug/L 50 1,2,4-Trichlorobenzene 42 - 130 10 U 98.3 49.5 ug/L 50

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
2-Fluorobiphenyl	63	EVE FEORE FOR THE HOLLOW CON-	38 - 130
2-Fluorophenol	63		25 - 130
Nitrobenzene-d5	69		39 - 130
Phenol-d5	64		25 - 130
Terphenyl-d14	62		10 - 143

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98328-1

SDG: KPS107

#### Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 680-98328-1 MSD

Matrix: Water

Analysis Batch: 314717

Client Sample ID: BSA-MW-2D-0214

Prep Type: Total/NA

Prep Batch: 314294

MSD MSD

Surrogate Qualifier Limits %Recovery 2,4,6-Tribromophenol 31 - 141

#### Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 680-315441/7

Analysis Batch: 315441

Client Sample ID: Method Blank

Matrix: Water Prep Type: Total/NA

MB MB Analyte Dil Fac Result Qualifier RL MDL Unit Prepared Analyzed Ethane 1.1 U 02/13/14 12:45 1.1 ug/L Ethylene 1.0 U 1.0 ug/L 02/13/14 12:45 Methane 0.58 U 02/13/14 12:45 0.58 ug/L Methane (TCD) 390 U 02/13/14 12:45 390 ug/L

Lab Sample ID: LCS 680-315441/3

Matrix: Water

Analysis Batch: 315441

Client Sample ID: Lab Control Sample

Client Sample ID: Lab Control Sample

Client Sample ID: Lab Control Sample Dup

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Type: Total/NA

Spike LCS LCS %Rec. Analyte Added Result Qualifier Unit %Rec Limits Ethane 288 313 ug/L 108 75 - 125 Ethylene 302 112 75 - 125 269 ug/L Methane 154 157 ug/L 102 75 - 125

Lab Sample ID: LCS 680-315441/5

Matrix: Water

į.	Analysis Batch: 315441									
			Spike	LCS	LCS				%Rec.	
	Analyte		Added	Result	Qualifier	Unit	D	%Rec	Limits	
	Methane (TCD)	 	1920	1480		ug/L	5,07.4	77	75 - 125	 *****

Lab Sample ID: LCSD 680-315441/4

Matrix: Water							Prep T	ype: To	tal/NA
Analysis Batch: 315441									
	Spike	LCSD	LCSD				%Rec.		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Ethane	288	301		ug/L		104	75 . 125	4	30
Ethylene	269	288		ug/L		107	75 - 125	5	30
Methane	154	153		ug/L		99	75 - 125	3	30

Lab Sample ID: LCSD 680-315441/6

į	Matrix: Water							Prep T	ype: Total/NA
	Analysis Batch: 315441								
		Spike	LCSD	LCSD				%Rec.	RPD
	Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD Limit
	Methane (TCD)	1920	2040	*	ug/L		106	75 - 125	(32) 30

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98328-1

SDG: KPS107

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 680-314468/1-A

Matrix: Water

Analysis Batch: 314641

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Duny Duniel 04 4400

Prep Batch: 314468

ļ		MB	MB							
	Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Iron	0.050	U	0.050		mg/L	*****	02/06/14 10:07	02/07/14 02:38	1
	Iron, Dissolved	0.050	U	0.050		mg/L		02/06/14 10:07	02/07/14 02:38	1
i	Manganese	0.010	U	0.010		mg/L		02/06/14 10:07	02/07/14 02:38	1
11.00	Manganese, Dissolved	0.010	U	0.010		mg/L		02/06/14 10:07	02/07/14 02:38	1

Lab Sample ID: LCS 680-314468/2-A

Matrix: Water

Analysis Batch: 314641

Client Sample ID: Lab Control Sample Prep Type: Total Recoverable

Prep Batch: 314468

i		Spike	LCS	LCS				%Rec.	
i	Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
	Iron	5.00	5.01	**************************************	mg/L		100	75 - 125	
	Iron, Dissolved	5.00	5.01		mg/L		100	75 - 125	
	Manganese	0.500	0.530		mg/L		106	75 - 125	
	Manganese, Dissolved	0.500	0.530		mg/L		106	75 125	
٠,	have								

Lab Sample ID: 680-98328-1 MS

Matrix: Water

Analysis Batch: 314641

Client Sample ID: BSA-MW-2D-0214

Prep Type: Total Recoverable

Prep Batch: 314468

Analysis Batom 614641											
Personal	Sample	Sample	Spike	MS	MS				%Rec.		
Analyle	Result	Qualifier	Added	Result	Qualifier	Unit <sup>'</sup>	D	%Rec	Limits	•	
Iron	3.5	Principolitical	5.00	8.46	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	mg/L		99	75 - 125		
fron, Dissolved	3.5		5.00	8.46		mg/L		99	75 - 125		
Manganese	0.56		0.500	1.08		mg/L		105	75 - 125		
Manganese, Dissolved	0.56		0.500	1.08		mg/L		105	75 - 125		

Lab Sample ID: 680-98328-1 MSD

Matrix: Water

Analysis Batch: 314641

Client Sample ID: BSA-MW-2D-0214 Prep Type: Total Recoverable

Prep Batch: 314468

ı	Analysis Daton, or 14041									, ,cb.	Juco	717700
41 des 200		Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
	Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
	Iron	3,5	-/	5,00	8.40		mg/L		97	75 - 125	1	20
	Iron, Dissolved	3.5		5.00	8.40		mg/L		97	75 - 125	1	20
	Manganese	0.56		0.500	1.07		mg/L		103	75 - 125	1	20
	Manganese, Dissolved	0.56		0.500	1.07		mg/L		103	75 - 125	1	20
i												

Method: 310.1 - Alkalinity

Lab Sample ID: MB 680-314795/5

Matrix: Water

Analysis Batch: 314795

Client Sample ID: Method Blank

Prep Type: Total/NA

MB MB Analyte Result Qualifier RL RL Unit Prepared Analyzed Dil Fac Alkalinity 5.0 U 5.0 mg/L 02/07/14 14:38 02/07/14 14:38 Carbon Dioxide, Free 5.0 U 5.0 mg/L

			~.	Oamp	J.U .	\ <b>\</b> \\							
Client: Solutia Inc. Project/Site: WGK Long Term Monitor	ring - 10	14								TestAme	rica Job ID:	680-98 DG: KI	
												DO. N	. 010
lethod: 310.1 - Alkalinity (Cor	ntinued	i)			•••••								
Lab Sample ID: LCS 680-314795/6 Matrix: Water									Clier	ıt Sampie	ID: Lab Co Prep Ty		•
Analysis Batch: 314795											i icp i	, pe. 10	(a)) (4)
				Spike		LCS	LCS				%Rec.		
Analyte				Added		Result	Qualifier	Unit	D	%Rec	Limits		
Alkalinity				250		231		mg/L		92	80 - 120	THE PARTY OF THE P	***************************************
Lab Sample ID: LCSD 680-314795/2	22							CI	ient Sa	mple ID:	Lab Control	Sampl	le Du
Matrix: Water											Prep Ty	/pe: To	tal/N
Analysis Batch: 314795													
A1				Spike			LCSD	£4 - 24		N/D.	%Rec.		RP
Analyte Alkalinity		***************************************	V-1-1-1-1-1	Added 250		223	Qualifier	Unit	D	%Rec 89	Limits 80 - 120	RPD 3	Lim 3
Aikainsty				250		223		mg/L		09	00 - 120	3	3
Lab Sample ID: 680-98328-1 DU									Ci	ient Sam	ple ID: BSA		
Matrix: Water											Prep Ty	/pe: To	tal/N
Analysis Batch: 314795	Samnia	Sample				DII	DU						RP
Analyte		Qualifie					Qualifier	Unit	D			RPD	Lim
Alkalinity	730					681		mg/L	<u>.</u>	h-4		7	
Carbon Dioxide, Free	46					40.2		mg/L				14	3
Lab Sample ID: 680-98328-3 DU									CI	ient Sam	ple ID: CPA	-MW-30	0-021
Matrix: Water											Prep Ty		
Analysis Batch: 314795				•				•				•	
	Sample	Sample				DU	DU						RP
Analyte	Result	Qualifie	r			Result	Qualifier	Unit	D			RPD	Lim
Alkalinity	590					583		mg/L				2	3
Carbon Dioxide, Free	6.1					5.21		mg/L				15	3
ethod: 325.2 - Chloride													**********
Lab Sample ID: MB 680-314548/16										Client S	Sample ID: I	Method	Blan
Matrix: Water											Prep Ty	ype: To	tal/N
Analysis Batch: 314548													
S-colored-		MB MI			г.		AADI tauta		Б	D	<b>0 1</b>		. 57.5
Analyte Chloride	K	esult Qu 1.0 U	ualifier		RL 1.0		MDL Unit mg/L		D	Prepared	Analyz- 02/06/14 1		Dil Fa
											<b></b>		
_ab Sample ID: LCS 680-314548/1 Matrix: Water									Clier	nt Sample	e ID: Lab Co Prep Ty		•
Analysis Batch: 314548											rich i	ype. To	rai/N
yolo =atoli, 014040				Spike		LCS	LCS				%Rec.		
Analyte				Added			Qualifier	Unit	D	%Rec	Limits		
Chloride		*	*	25.0		26.0	**************************************	mg/L		104	85 - 115		OFFICE AND A STATE OF THE STATE
L-46 - J. 252 O. N	. 4 _ BI*/	····											
lethod: 353.2 - Nitrogen, Nitra	ate-Nitr	ite			.,,,.,		.,			,			
Lab Sample ID: MB 680-314406/14										Client S	Sample ID: I	Method	Blan

TestAmerica Savannah

Analyzed

02/05/14 17:02

Prep Type: Total/NA

Dil Faç

RL

0.050

MDL Unit

mg/L

D

Prepared

MB MB

0.050 U

Result Qualifier

Matrix: Water

Analyte

Nitrate as N

Analysis Batch: 314406

Client: Solutia Inc.			Q	Samı د	oie r	(esu	เร				TasiAma	riaa lah ID:	C00 0	0200
alent. Solutia inc. Project/Site: WGK Long Term Monito	ring - 1Q	14									restAme	rica Job ID: ( S	080-98 DG: K	
lethod: 353.2 - Nitrogen, Nitr	ate-Niti	ite (	Continu	ıed)										
Lab Sample ID: LCS 680-314406/1	3									Clien	t Sample	ID: Lab Cor	ntrol S	Samp
Matrix: Water												Prep Ty	pe: To	otal/N
Analysis Batch: 314406														
				Spike			LCS					%Rec.		
Analyte				Added	*********	Result	Qual	ifier	Unit	D	%Rec	Limits		
Nitrate as N				0.500		0.544			mg/L		109	90 - 110		
Nitrate Nitrite as N				1.00		1.04			mg/L		104	90 - 110		
Nitrite as N				0,500		0.491			mg/L		98	90 - 110		
Lab Sample ID: 680-98328-1 MS										Cli	ent Samp	ole ID: BSA-I	MW-2	D-02
Matrix: Water												Prep Ty	pe: To	otal/
Analysis Batch: 314406														
	Sample		•	Spike			MS			_		%Rec.		
Analyte	Result		ifier	Added		Result	Qual	ifier	Unit	D	%Rec	Limits		
litrate as N	0.050	U		0.500		0.551			mg/L		110	90 - 110		
Nitrate Nitrite as N	0.050			1.00		1.06			mg/L		106	90 . 110		
Nitrite as N	0.050			0.500		0.514			mg/L		103	90 - 110		
Lab Sample ID: 680-98328-1 MSD										Cli	ent Samı	ole ID: BSA-l		
Matrix: Water												Prep Ty	pe: To	otal/
Analysis Batch: 314406														
	Sample			Spike			MSD					%Rec.		F
Analyte	Result		ifier	Added		Result		ifier	Unit	D	%Rec	Limits	RPD	Li
Nitrate as N	0,050	U		0.500		0.553	F1		mg/L		(111	90_110	0	
Nitrate Nitrite as N	0.050		,	1.00		1.07		·	mg/L		107	90 - 110	0	
Nitrite as N	0.050			0.500		0.512			mg/L		102	90 . 110	0	
ethod: 375.4 - Sulfate														··········
Lab Sample ID: MB 680-314563/5											Client S	ample ID: M	ethod	i Bia
Matrix: Water												Prep Ty	pe: To	ota!/
Analysis Batch: 314563			мв											
Analyte	R	MB esuit	MB Qualifier		RL		MDL	Unit		D 9	Prepared	Analyze	ď	Dil
Sulfate	Visit Company of Landson	5.0	Ū		5.0			mg/L				02/06/14 14	1:09	***************************************
Lab Sample ID: LCS 680-314563/13 Matrix: Water	7									Clien	t Sample	ID: Lab Cor Prep Ty		
nguin, ffatui												tich ià	he, it	nai/

Prep Type: Total/NA MS MS %Rec. Result Qualifier Unit %Rec Limits 75 - 125 196 mg/L

%Rec

100

TestAmerica Savannah

%Rec.

Limits

75 - 125

Client Sample ID: CPA-MW-3D-0214

Spike

Added

Sample Sample

50 U

Result Qualifier

20.0

Spike

Added

200

LCS LCS

20.1

Result Qualifier

Unit

mg/L

Analysis Batch: 314563

Analysis Batch: 314563

Lab Sample ID: 680-98328-3 MS

Analyte

Sulfate

Analyte

Sulfate

Matrix: Water

		Q	Samp	ole F	Resu	lts							
Client: Solutia Inc. <sup>o</sup> roject/Site: WGK Long Term Monitor	ring - 1Q		•						Te	stAme	erica Job ID: S		8328-1 (PS107
llethod: 375.4 - Sulfate (Conti	nued)												
Lab Sample ID: 680-98328-3 MSD								С	lient	t Samı	ole ID: CPA	-MW-3	D-0214
Matrix: Water											Prep Ty	/pe: Te	otal/NA
Analysis Batch: 314563		<b>A</b>											
Analyte	•	Sample Qualifier	Spike Added			MSD Qualifier	Unit		D %	%Rec	%Rec. Limits	RPD	RPC Limi:
Sulfate	50		200		198	Qualifici	mg/L			99	75 - 125	1	30
A-th-J. 1454 DOC										· · · · · · · · · · · · · · · · · · ·	A		
lethod: 415.1 - DOC													
Lab Sample ID: MB 680-314915/2-A	١								C	lient S	ample ID: N		
Matrix: Water											Prep Typ	e: Dis	solved
Analysis Batch: 314912		MB MB											
Analyte	D	esult Qualifier		RL		MDL Unit		D	Dror	pared	Analyze	o.d	Dil Fac
Dissolved Organic Carbon		1.0 U		1.0		mg/L			rich	Ja167	02/07/14 1		Dii Fac
Lab Sample ID: LCS 680-314915/1-	A							Clie	ent S	ample	D: Lab Co		-
Matrix: Water											Prep Typ	e: Dis	solve
Analysis Batch: 314912			Spike		l ne	LCS					%Rec.		
Analyte			Added			Qualifier	Unit		D 9	%Rec	Limits		
Dissolved Organic Carbon			20.0	***************************************	21.3	Quanter	mg/L			106	80 - 120	\$10\$100000\$d	
Lab Sample ID: 680-98328-2 MS								Client S	Samp	ole ID:	BSA-MW-2	•	
Matrix: Water											Prep Typ	e: Dis	solved
Analysis Batch: 314912	Sample	Sample	Spike		MS	MS					%Rec.		
Analyte	·-	Qualifier	Added		Result		Unit		פ ס	%Rec	Limits		
Dissolved Organic Carbon	6.3		20,0		27.6		mg/L			106	80 - 120		
Lab Sample ID: 680-98328-2 MSD								Cliant S	:amr	da ID.	BSA-MW-2	D E(A	2) 024
Matrix: Water								Cheffi 5	απη	ME ID.	Prep Typ		•
Analysis Batch: 314912											. 100 . 11	,c. Die	001100
, 5,5 2 4.5 5 1 1 2	Sample	Sample	Spike		MSD	MSD					%Rec.		RPD
Analyte	Result	Qualifier	Added		Result	Qualifier	Unit	1	D 9	%Rec	Limits	RPD	Limi
Dissolved Organic Carbon	6.3		20.0		27.4		mg/L			106	80 - 120	1	20
lethod: 415.1 - TOC										······································	11.5.5		
Lab Sample ID: MB 680-314908/2									С	lient S	Sample ID: N	Metho	d Blank
Matrix: Water											Prep Ty		
Analysis Batch: 314908											, ,	•	
		MB MB											
Analyte	R	esult Qualifier	NAME BURNISH	RL		MDL Unit		D	Pre	pared	Analyze		Dil Fac
Total Organic Carbon		1.0 U		1.0		mg/L					02/06/14 1	8:20	•
Lab Sample ID: LCS 680-314908/5								Clie	ent S	ample	e ID: Lab Co	ntrol :	Sample
Matrix: Water										•	Prep Ty		
Analysis Batch: 314908													
			Spike		LCS	LCS					%Rec.		

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Limits

80 - 120

MAR 0 5 2014

Result Qualifier

21.1

Unit

mg/L

D

%Rec

106

Added

20.0

Analyte

Total Organic Carbon

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98328-1

SDG: KPS107

Method: 415.1 - TOC (Continued)

Lab Sample ID: 680-98328-1 DU

Matrix: Water

Client Sample ID: BSA-MW-2D-0214

Prep Type: Total/NA

Matrix: Water
Analysis Batch: 314908

Sample Sample DU DU RPD
Analyte Result Qualifier Result Qualifier Unit D RPD Limit

 Analyte
 Result
 Qualifier
 Result
 Qualifier
 Unit
 D
 RPD
 Limit

 Total Organic Carbon
 6.8
 6.78
 mg/L
 0.3
 25

#### **QC Association Summary**

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98328-1

SDG: KPS107

#### GC/MS VOA

Analys	sis E	Batch	า: 3	14439
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Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-98328-1	BSA-MW-2D-0214	Total/NA	Water	8260B	
680-98328-1 MS	BSA-MW-2D-0214	Total/NA	Water	8260B	
680-98328-1 MSD	BSA-MW-2D-0214	Total/NA	Water	8260B	
680-98328-3	CPA-MW-3D-0214	Total/NA	Water	8260B	
680-98328-6	1Q14 LTM Trip Blank #2	Total/NA	Water	8260B	
LCS 680-314439/4	Lab Control Sample	Total/NA	Water	8260B	
LCSD 680-314439/5	Lab Control Sample Dup	Total/NA	Water	8260B	
MB 680-314439/8	Method Blank	Total/NA	Water	8260B	

#### Analysis Batch: 314624

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-98328-5	CPA-MW-3D-0214-AD	Total/NA	Water	8260B	
LCS 680-314624/4	Lab Control Sample	Total/NA	Water	8260B	
LCSD 680-314624/5	Lab Control Sample Dup	Total/NA	Water	8260B	
MB 680-314624/9	Method Blank	Total/NA	Water	8260B	

#### GC/MS Semi VOA

#### Prep Batch: 314294

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-98328-1	BSA-MW-2D-0214	Total/NA	Water	3520C	
680-98328-1 MS	BSA-MW-2D-0214	Total/NA	Water	3520C`	
680-98328-1 MSD	BSA-MW-2D-0214	Total/NA	Water	3520C	
680-98328-3	CPA-MW-3D-0214	Total/NA	Water	3520C	
680-98328-5	CPA-MW-3D-0214-AD	Total/NA	Water	3520C	
LCS 680-314294/7-A	Lab Control Sample	Total/NA	Water	3520C	
MB 680-314294/6-A	Method Blank	Total/NA	Water	3520C	

#### Analysis Batch: 314717

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-98328-1	BSA-MW-2D-0214	Total/NA	Water	8270D	314294
680-98328-1 MS	BSA-MW-2D-0214	Total/NA	Water	8270D	314294
680-98328-1 MSD	BSA-MW-2D-0214	Total/NA	Water	8270D	314294
680-98328-3	CPA-MW-3D-0214	Total/NA	Water	8270D	314294
680-98328-5	CPA-MW-3D-0214-AD	Total/NA	Water	8270D	314294
LCS 680-314294/7-A	Lab Control Sample	Total/NA	Water	8270D	. 314294

#### Analysis Batch: 314885

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 680-314294/6-A	Method Blank	Total/NA	Water	8270D	314294

#### GC VOA

#### Analysis Batch: 315441

	Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
	680-98328-1	BSA-MW-2D-0214	Total/NA	Water	RSK-175	***************************************
-	680-98328-3	CPA-MW-3D-0214	Total/NA	Water	RSK-175	
	LCS 680-315441/3	Lab Control Sample	Total/NA	Water	RSK-175	
	LCS 680-315441/5	Lab Control Sample	Total/NA	Water	RSK-175	
	LCSD 680-315441/4	Lab Control Sample Dup	Total/NA	Water	RSK-175	

#### **QC Association Summary**

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98328-1

SDG: KPS107

#### GC VOA (Continued)

Analysis	Batch:	315441	(Continued)	ì
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Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 680-315441/6	Lab Control Sample Dup	Total/NA	Water	RSK-175	
MB 680-315441/7	Method Blank	Tota!/NA	Water	RSK-175	

#### Metals

#### Prep Batch: 314468

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-98328-1	BSA-MW-2D-0214	Total Recoverable	Water	3005A	
680-98328-1 MS	BSA-MW-2D-0214	Total Recoverable	Water	3005A	
680-98328-1 MSD	BSA-MW-2D-0214	Total Recoverable	Water	3005A	
680-98328-2	BSA-MW-2D-F(0.2)-0214	Dissolved	Water	3005A	
680-98328-3	CPA-MW-3D-0214	Total Recoverable	Water	3005A	
680-98328-4	CPA-MW-3D-F(0.2)-0214	Dissolved	Water	3005A	
LCS 680-314468/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
MB 680-314468/1-A	Method Blank	Total Recoverable	Water	3005A	

#### Analysis Batch: 314641

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-98328-1	BSA-MW-2D-0214	Total Recoverable	Water	6010C	314468
680-98328-1 MS	BSA-MW-2D-0214	Total Recoverable	Water	6010C	314468
680-98328-1 MSD	BSA-MW-2D-0214	Total Recoverable	Water	6010C	314468
680-98328-2	BSA-MW-2D-F(0.2)-0214	Dissolved	Water	6010C	314468
680-98328-3	CPA-MW-3D-0214	Total Recoverable	Water	6010C	314468
680-98328-4	CPA-MW-3D-F(0.2)-0214	Dissolved	Water	6010C	314468
LCS 680-314468/2-A	Lab Control Sample	Total Recoverable	Water	6010C	314468
MB 680-314468/1-A	Method Blank	Total Recoverable	Water	6010C	314468

#### **General Chemistry**

#### Analysis Batch: 314406

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-98328-1	BSA-MW-2D-0214	Total/NA	Water	353.2	····
680-98328-1 MS	BSA-MW-2D-0214	Total/NA	Water	353.2	
680-98328-1 MSD	BSA-MW-2D-0214	Total/NA	Water	353.2	
680-98328-3	CPA-MW-3D-0214	Total/NA	Water	353.2	
LCS 680-314406/13	Lab Control Sample	Total/NA	Water	353.2	
MB 680-314406/14	Method Blank	Total/NA	Water	353.2	

#### Analysis Batch: 314548

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-98328-1	BSA-MW-2D-0214	Total/NA	Water	325.2	
680-98328-3	CPA-MW-3D-0214	Total/NA	Water	325.2	
LCS 680-314548/1	Lab Control Sample	Total/NA	Water	325.2	
MB 680-314548/16	Method Blank	Total/NA	Water	325.2	

#### Analysis Batch: 314563

	Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batch
	680-98328-1	BSA-MW-2D-0214	Total/NA	Water	375.4	
-	680-98328-3	CPA-MW-3D-0214	Total/NA	Water	375.4	
A CONTRACTOR	680-98328-3 MS	CPA-MW-3D-0214	Total/NA	Water	375.4	

#### **QC Association Summary**

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98328-1

SDG: KPS107

#### General Chemistry (Continued)

1	Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
	680-98328-3 MSD	CPA-MW-3D-0214	Total/NA	Water	375.4	
	LCS 680-314563/17	Lab Control Sample	Total/NA	Water	375.4	
	MB 680-314563/5	Method Blank	Total/NA	Water	375.4	
	*					

#### Analysis Batch: 314795

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-98328-1	BSA-MW-2D-0214	Total/NA	Water	310.1	
680-98328-1 DU	BSA-MW-2D-0214	Total/NA	Water	310.1	
680-98328-3	CPA-MW-3D-0214	Total/NA	Water	310.1	
680-98328-3 DU	CPA-MW-3D-0214	Total/NA	Water	310.1	
LCS 680-314795/6	Lab Control Sample	Total/NA	Water	310.1	
LCSD 680-314795/22	Lab Control Sample Dup	Total/NA	Water	310.1	
MB 680-314795/5	Method Blank	Total/NA	Water	310.1	

#### Analysis Batch: 314908

Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batch
680-98328-1	BSA-MW-2D-0214	Total/NA	Water	415.1	***************************************
680-98328-1 DU	BSA-MW-2D-0214	Total/NA	Water	415.1	
680-98328-3	CPA-MW-3D-0214	Total/NA	Water	415.1	
LCS 680-314908/5	Lab Control Sample	Total/NA	Water	415.1	
MB 680-314908/2	Method Blank	Total/NA	Water	415.1	
5					

#### Analysis Batch: 314912

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-98328-2	BSA-MW-2D-F(0.2)-0214	Dissolved	Water	415.1	
680-98328-2 MS	BSA-MW-2D-F(0.2)-0214	Dissolved	Water	415.1	
680-98328-2 MSD	BSA-MW-2D-F(0.2)-0214	Dissolved	Water	415.1	
680-98328-4	CPA-MW-3D-F(0.2)-0214	Dissolved	Water	415,1	
LCS 680-314915/1-A	Lab Control Sample	Dissolved	Water	415.1	314915
MB 680-314915/2-A	Method Blank	Dissolved	Water	415.1	314915

#### Filtration Batch: 314915

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 680-314915/1-A	Lab Control Sample	Dissolved	Water	FILTRATION	***************************************
MB 680-314915/2-A	Method Blank	Dissolved	Water	FILTRATION	

#### Lab Chronicle

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98328-1

SDG: KPS107

Client Sample ID: BSA-MW-2D-0214

Date Collected: 02/04/14 10:45 Date Received: 02/05/14 09:46 Lab Sample ID: 680-98328-1

Matrix: Water

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B	***************************************	2000	314439	02/06/14 15:14	MMT	TAL SAV
Total/NA	Prep	3520C			314294	02/06/14 15:30	RBS	TAL SAV
Total/NA	Analysis	8270D		1	314717	02/08/14 00:21	NED	TAL SAV
Total/NA	Analysis	RSK-175		1	315441	02/13/14 15:42	TAR	TAL SAV
Total Recoverable	Prep	3005A			314468	02/06/14 10:07	BJB	TAL SAV
Total Recoverable	Analysis	6010C		1	314641	02/07/14 02:58	BCB	TAL SAV
Total/NA	Analysis	353.2		1	314406	02/05/14 17:04	GRX	TAL SAV
Total/NA	Analysis	325.2		5	314548	02/06/14 11:56	JME	TAL SAV
Total/NA	Analysis	375.4		1	314563	02/06/14 14:07	JME	TAL SAV
Total/NA	Analysis	310.1		1	314795	02/07/14 15:43	LBH	TAL SAV
Total/NA	Analysis	415.1		1	314908	02/06/14 21:41	CMP	TAL SAV

Client Sample ID: BSA-MW-2D-F(0.2)-0214

Date Collected: 02/04/14 10:45

Date Received: 02/05/14 09:46

Lab Sample ID: 680-98328-2

Matrix: Water

and the second		Batch	Batch			Dilution	Batch	Prepared		
	Prep Tỳpe	Туре	Method	•	Run	Factor	` Number	or Analyzed	Analyst	' Lab
	Dissolved	Prep	3005A	*********	***************************************		314468	02/06/14 10:07	BJB	TAL SAV
	Dissolved	Analysis	6010C			1	314641	02/07/14 03:23	BCB	TAL SAV
0.000	Dissolved	Analysis	415.1			1	314912	02/07/14 16:50	CMP	TAL SAV

Client Sample ID: CPA-MW-3D-0214

Date Collected: 02/04/14 12:40

Date Received: 02/05/14 09:46

Lab	Sam	pie	ID:	680-9	8328-3	

Matrix: Water

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B	·····	100	314439	02/06/14 15:44	MMT	TAL SAV
Total/NA	Prep	3520C			314294	02/06/14 15:30	RBS	TAL SAV
Total/NA	Analysis	8270D		1	314717	02/08/14 00:46	NED	TAL SAV
Total/NA	Analysis	RSK-175		1	315441	02/13/14 15:55	TAR	TAL SAV
Total Recoverable	Prep	3005A			314468	02/06/14 10:07	BJB	TAL SAV
Total Recoverable	Analysis	6010C		1	314641	02/07/14 03:28	BCB	TAL SAV
Total/NA	Analysis	353.2		1	314406	02/05/14 17:07	GRX	TAL SAV
Total/NA	Analysis	325.2		10	314548	02/06/14 11:56	JME	TAL SAV
Total/NA	Analysis	375.4		10	314563	02/06/14 14:27	JME	TAL SAV
Tota!/NA	Analysis	310.1		1	314795	02/09/14 09:42	LBH	TAL SAV
Total/NA	Analysis	415.1		1	314908	02/06/14 22:06	CMP	TAL SAV

TestAmerica Savannah

MAR 0 5 2014

#### Lab Chronicle

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98328-1

SDG: KPS107

Client Sample ID: CPA-MW-3D-F(0.2)-0214

Date Collected: 02/04/14 12:40 Date Received: 02/05/14 09:46 Lab Sample ID: 680-98328-4

Matrix: Water

		Batch	Batch		Ditution	Batch	Prepared		
-	Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
-	Dissolved	Prep	3005A			314468	02/06/14 10:07	BJB	TAL SAV
	Dissolved	Analysis	6010C		1	314641	02/07/14 03:33	BCB	TAL SAV
	Dissolved	Analysis	415.1		1	314912	02/07/14 17:33	CMP	TAL SAV

Client Sample ID: CPA-MW-3D-0214-AD

Date Collected: 02/04/14 12:40

Date Received: 02/05/14 09:46

Lab Sample ID: 680-98328-5

Matrix: Water

		Batch	Batch		Dilution	Batch	Prepared		
1	Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
	Total/NA	Analysis	8260B	***************************************	100	314624	02/07/14 14:27	MMT	TAL SAV
	Total/NA	Prep	3520C			314294	02/06/14 15:30	RBS	TAL SAV
	Total/NA	Analysis	8270D		1	314717	02/08/14 01:10	NED	TAL SAV

Client Sample ID: 1Q14 LTM Trip Blank #2

Date Collected: 02/04/14 00:00

Date Received: 02/05/14 09:46

Lab Sample ID: 680-98328-6

Matrix: Water

Batch Batch Dilution Batch Prepared Prep Type Type Method Run Factor Number or Analyzed Analyst Lab 314439 02/06/14 17:12 TAL SAV Total/NA Analysis 8260B

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

TestAmerica Savannah

MAR 0 5 2014

#### Savannah

5102 LaRoche Avenue

### Chain of Custody Record



Savannah, GA 31404

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URS Corporation	Tel/Fax:	(314) 743-41				Lat	o Con	tact:	Mic	hele	Kerse	ý		C	rrier	- <del>-</del> <del>-</del> <del>-</del> <del>-</del> <del>-</del> <del>-</del> <del>-</del> <del>-</del> <del>-</del> <del>-</del>	ed t	<u>X</u>					)Cs	
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Project Name: 1Q14 LTM GW Sampling	<b>」</b> ⊑		l week					.   ĕ		/Sal	🚆		70											
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Page 33 of 35



#### Login Sample Receipt Checklist

Client: Solutia Inc.

Job Number: 680-98328-1

SDG Number: KPS107

List Source: TestAmerica Savannah

Login Number: 98328 List Number: 1

Creator: Banda, Christy S

- "	_	
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>N/A</td> <td></td>	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	line B4 ph needs to be adju.
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

MAR & W

#### **Certification Summary**

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98328-1

SDG: KP\$107

#### Laboratory: TestAmerica Savannah

All certifications held by this taboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
	AFCEE		SAVLAB	
A2LA	DoD ELAP		399.01	02-28-15
A2LA	ISO/IEC 17025		399.01	02-28-15
Alabama	State Program	4	41450	06-30-14
Arkansas DEQ	State Program	6	88-0692	01-31-15
California	NELAP	9	3217CA	07-31-14
Colorado	State Program	8	N/A	12-31-14
Connecticut	State Program	1	PH-0161	03-31-15
Florida	NELAP	4	E87052	06-30-14
GA Dept. of Agriculture	State Program	4	N/A	06-30-14
Georgia	State Program	4	N/A	06-30-14
Georgía	State Program	4	803	06-30-14
Guam	State Program	9	09-005r	04-17-14
Hawaii	State Program	9	N/A	06-30-14
Illinois	NELAP	5	200022	11-30-14
Indiana	State Program	5	N/A	06-30-14
lowa	State Program	7	353	07-01-15
Kentucky (DW)	State Program	4	90084	12-31-14
Kentucky (UST)	State Program	4	18	06-30-14
Louisiana	NELAP	6	LA100015	12-31-14
Maine	State Program	1	GA00006	08-16-14
Maryland	State Program	3	250	12-31-14
Massachusetts	State Program	· 1	M-GA006	06-30-14
Michigan	State Program	5	9925	06-30-14
Mississippi	State Program	4	N/A	06-30-14
Montana	State Program	8	CERT0081	01-01-15
Nebraska	State Program	7	TestAmerica-Savannah	06-30-14
New Jersey	NELAP	2	GA769	06-30-14
New Mexico	State Program	6	N/A	06-30-14
New York	NELAP	2	10842	03-31-14
North Carolina DENR	State Program	4	269	12-31-14
North Carolina DHHS	State Program	4	13701	07-31-14
Oklahoma	State Program	6	9984	08-31-14
Pennsylvania	NELAP	3	68-00474	06-30-14
Puerto Rico	State Program	2	GA00006	01-01-14 *
South Carolina	State Program	4	98001	06-30-14
Tennessee	State Program	4	TN02961	. 06-30-14
Texas	NELAP	6	T104704185-08-TX	11-30-14
JSDA	Federal		SAV 3-04	04-07-14
Virginia .	NELAP	3	460161	06-14-14
Washington	State Program	10	C1794	06-10-14
West Virginia DEP	State Program	3	94	06-30-14
West Virginia DHHR	State Program	3	9950C	12-31-13 *
<i>V</i> isconsin	State Program	5	999819810	08-31-14
Wyoming	State Program	8	8TMS-L	05-30-14

My 0 8 5018

<sup>\*</sup> Expired certification is currently pending renewal and is considered valid,

## Solutia Krummrich Data Review WGK LTM 1Q14

**Laboratory SDG: KPS108** 

Data Reviewer: Melissa Mansker Peer Reviewer: Elizabeth Kunkel

Date Reviewed: 3/6/2014

Guidance: USEPA National Functional Guidelines for Superfund Organic Methods Data Review 2008. USEPA National Functional Guidelines for Superfund

**Inorganic Data Review 2010** 

Work Plan: Revised Long-Term Monitoring Program (LTMP) Work Plan (Solutia

2009)

Sample Identification									
BSA-MW-5D-0214	BSA-MW-5D-F(0.2)-0214								
BSA-MW-4D-0214	BSA-MW-4D-F(0.2)-0214								
BSA-MW-5D-0214-EB	1Q14 LTM Trip Blank #3								

#### 1.0 Data Package Completeness

Were all items delivered as specified in the QAPP and COC as appropriate? Yes

#### 2.0 Laboratory Case Narrative \ Cooler Receipt Form

Were problems noted in the laboratory case narrative or cooler receipt form?

Yes, the laboratory case narrative indicated that the methane LCS/LCSD RPD was outside evaluation criteria, and LCS/LCSD recoveries were outside evaluation criteria for 4-chloroaniline and nitrate. Nitrate MS/MSD recoveries were outside evaluation criteria for sample BSA-MW-5D-0214. Internal standard perylene-d<sub>12</sub> was outside evaluation criteria in sample BSA-MW-4D-0214. Samples were diluted due to high levels of target analytes. Instrument calibration was outside evaluation criteria for nitrate in samples BSA-MW-5D-0214 and BSA-MW-4D-0214. These issues are addressed further in the appropriate sections below.

The cooler receipt form indicated that one of one cooler was received by the laboratory at a temperature of  $0.6^{\circ}$ C which is outside the  $4^{\circ}$ C  $\pm$   $2^{\circ}$ C criteria. The samples were received in good condition; therefore no qualification of data was required. The cooler receipt form indicated a pH > 2 for dissolved organic carbon in samples BSA-MW-4D-F(0.2)-0214 and BSA-MW-5D-F(0.2)-0214; please see section 11.0 of this review for qualifications. Additionally, the equipment blank BSA-MW-5D-0214-EB was inadvertently labeled incorrectly on the COC and on sample ID labels. URS notified the laboratory; no qualification of data was required.

#### 3.0 Holding Times

Were samples extracted/analyzed within applicable limits?

Yes

#### 4.0 Blank Contamination

Were any analytes detected in the Method Blanks, Field Blanks or Trip Blanks?

No

#### 5.0 Laboratory Control Sample

Were LCS recoveries within evaluation criteria?

No

LCS/LCSD ID	Parameter	Analyte	LCS/LCSD Recovery	RPD	LCS/LCSD/ RPD Criteria
LCS/LCSD 680- 315638/7/8-A	SVOCs	4-Chloroaniline	14/12	14	42-130/50
LCS/LCSD 680- 315441/5/6	Dissolved gases	Methane	77/106	32	75-125/30
LCS 680-315033/14	General chemistry	Nitrate	111	NA	90-110

Analytical data that required qualification based on LCS data are included in the table below. The compound 4-chloroaniline is not reported for the associated samples. Analytical data reported as non-detect and associated with LCS recoveries above evaluation criteria, indicating a possible high bias, did not require qualification. Methane LCS/LCSD recoveries were within evaluation criteria; samples are not qualified based on LCS/LCSD RPD alone; therefore, methane data associated did not require qualification. No qualification of data was required.

#### 6.0 Surrogate Recoveries

Were surrogate recoveries within evaluation criteria?

Yes

#### 7.0 Matrix Spike and Matrix Spike Duplicate Recoveries

Were MS/MSD samples collected as part of this SDG?

Yes, although not requested, sample BSA-MW-4D-F(0.2)-0214 was spiked and analyzed for dissolved metals, sample BSA-MW-4D-0214 was spiked and analyzed for chloride, and sample BSA-MW-5D-0214 was spiked and analyzed for nitrate.

Were MS/MSD recoveries within evaluation criteria?

No

MS/MSD ID	Parameter	Analyte	MS/MSD Recovery	RPD	MS/MSD/ RPD Criteria
BSA-MW-5D-0214	General chemistry	Nitrate	110/ <b>111</b>	0	90-110/10

Analytical results reported as non-detect and associated with MS/MSD recoveries above evaluation criteria, indicating a high bias, did not require qualification. No qualification of data was required.

#### 8.0 Internal Standard (IS) Recoveries

Were internal standard area recoveries within evaluation criteria?

No

Sample ID	Parameter	Analyte	IS Area Recovery	IS Criteria
BSA-MW-4D-0214	SVOCs	Perylene-d <sub>12</sub>	779036	1352113-5408452

Sample BSA-MW-4D-0214 did not have analytical data associated with internal standard perylene-d<sub>12</sub>. No qualification of data was required.

#### 9.0 Laboratory Duplicate Results

Were laboratory duplicate samples collected as part of this SDG?

Yes, sample BSA-MW-4D-0214 was spiked and analyzed for total organic carbon.

Were laboratory duplicate sample RPDs within criteria?

Yes

#### 10.0 Field Duplicate Results

Were field duplicate samples collected as part of this SDG?

No

#### 10.0 Sample Dilutions

For samples that were diluted and nondetect, were undiluted results also reported? Not applicable; analytes were detected in samples that were diluted.

#### 11.0 Additional Qualifications

Were additional qualifications applied?

Yes, the following samples are qualified, as summarized below, due to pH > 2.

Sample ID	Parameter	Analyte	Qualification
BSA-MW-5D-F(0.2)-0214	General chemistry	Dissolved organic carbon	J
BSA-MW-4D-F(0.2)-0214	General chemistry	Dissolved organic carbon	J

1Q14 DATA REVIEW SDG KPS108

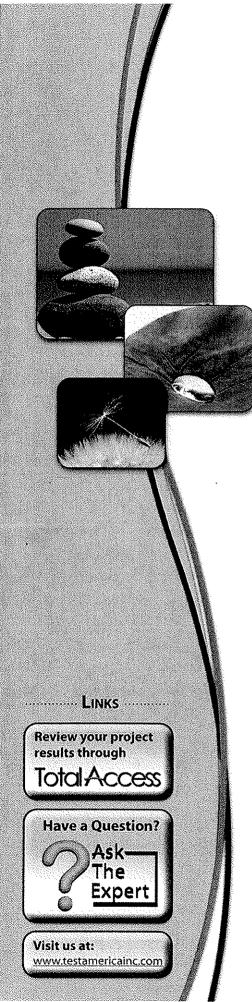
Additionally, the following samples are qualified, as summarized below, due to instrument calibration outside evaluation criteria for nitrate.

Sample ID	Parameter	Analyte	Qualification
BSA-MW-5D-0214	General chemistry	Nitrate	UJ
BSA-MW-4D-0214	General chemistry	Nitrate	UJ

#### SDG KPS108

Results of Samples from Monitoring Well:

BSA-MW-4D BSA-MW-5D



# **TestAmerica**

THE LEADER IN ENVIRONMENTAL TESTING

#### **ANALYTICAL REPORT**

TestAmerica Laboratories, Inc. TestAmerica Savannah 5102 LaRoche Avenue Savannah, GA 31404 Tel: (912)354-7858

TestAmerica Job ID: 680-98461-1

TestAmerica Sample Delivery Group: KPS108

Client Project/Site: WGK Long Term Monitoring - 1Q14

For:

Solutia Inc. 575 Maryville Centre Dr. Saint Louis, Missouri 63141

Attn: Mr. Jerry Rinaldi

Michael Kusy

Authorized for release by: 2/25/2014 12:32:47 PM

Michele Kersey, Project Manager I (912)354-7858 michele.kersey@testamericainc.com

Reviewed on MAR 0 6 2014

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

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#### **Case Narrative**

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98461-1

SDG: KPS108

Job ID: 680-98461-1

Laboratory: TestAmerica Savannah

Narrative

#### CASE NARRATIVE

Client: Solutia Inc.

Project: WGK Long Term Monitoring - 1Q14

Report Number: 680-98461-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In the event of interference or analytes present at high concentrations, samples may be diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

#### RECEIPT

The samples were received on 2/8/2014 10:21 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.6° C.

#### Except:

Per the client Nathan McNurlen, the sample ID on the COC and container labels was incorrect, the correct sample ID is: BSA-MW-05D-0214-EB (BSA-MW-05D-0214-EB (680-98461-5))

Method(s) 415.1: The following sample(s) were collected in properly preserved bottles for analysis of total organic compounds (TOCs). However, the pH was outside the required criteria when verified by the laboratory, and corrective action was not possible: BSA-MW-04D-F(0.2)-0214 (680-98461-4), BSA-MW-05D-F(0.2)-0214 (680-98461-2).

#### **VOLATILE ORGANIC COMPOUNDS (GC-MS)**

Samples BSA-MW-05D-0214 (680-98461-1), BSA-MW-04D-0214 (680-98461-3), BSA-MW-05D-0214-EB (680-98461-5) and 1Q14 LTM Trip Blank #3 (680-98461-6) were analyzed for Volatile Organic Compounds (GC-MS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 02/13/2014.

Samples BSA-MW-05D-0214 (680-98461-1)[5X] and BSA-MW-04D-0214 (680-98461-3)[25X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No difficulties were encountered during the volatiles analysis.

All quality control parameters were within the acceptance limits.

#### SEMIVOLATILE ORGANIC COMPOUNDS (AQUEOUS)

Samples BSA-MW-05D-0214 (680-98461-1), BSA-MW-04D-0214 (680-98461-3) and BSA-MW-05D-0214-EB (680-98461-5) were analyzed for Semivolatile Organic Compounds (Aqueous) in accordance with EPA SW-846 Method 8270D. The samples were prepared on 02/14/2014 and analyzed on 02/17/2014.

No difficulties were encountered during the semivolatiles analysis.

All quality control parameters were within the acceptance limits.

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DISSOLVED GASES

Samples BSA-MW-05D-0214 (680-98461-1) and BSA-MW-04D-0214 (680-98461-3) were analyzed for dissolved gases in accordance with RSK-175. The samples were analyzed on 02/13/2014.

TestAmerica Savannah

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#### **Case Narrative**

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98461-1

SDG: KPS108

Job ID: 680-98461-1 (Continued)

Laboratory: TestAmerica Savannah (Continued)

Methane (TCD) exceeded the RPD limit for LCSD 680-315441/6. Refer to the QC report for details.

No other difficulties were encountered during the dissolved gases analysis.

All other quality control parameters were within the acceptance limits.

#### METALS (ICP)

Samples BSA-MW-05D-F(0.2)-0214 (680-98461-2) and BSA-MW-04D-F(0.2)-0214 (680-98461-4) were analyzed for Metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared on 02/10/2014 and 02/11/2014 and analyzed on 02/11/2014.

No difficulties were encountered during the metals analysis.

All quality control parameters were within the acceptance limits.

#### METALS (ICP)

Samples BSA-MW-05D-0214 (680-98461-1) and BSA-MW-04D-0214 (680-98461-3) were analyzed for Metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared on 02/10/2014 and analyzed on 02/11/2014.

No difficulties were encountered during the metals analysis.

All quality control parameters were within the acceptance limits.

#### **ALKALINITY**

Samples BSA-MW-05D-0214 (680-98461-1) and BSA-MW-04D-0214 (680-98461-3) were analyzed for alkalinity in accordance with EPA Method 310.1. The samples were analyzed on 02/09/2014.

No difficulties were encountered during the alkalinity analysis.

All quality control parameters were within the acceptance limits.

#### CHLORIDE

Samples BSA-MW-05D-0214 (680-98461-1) and BSA-MW-04D-0214 (680-98461-3) were analyzed for Chloride in accordance with EPA Method 325.2. The samples were analyzed on 02/11/2014.

Samples BSA-MW-05D-0214 (680-98461-1)[5X] and BSA-MW-04D-0214 (680-98461-3)[5X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No difficulties were encountered during the chloride analysis.

All quality control parameters were within the acceptance limits.

#### **NITRATE-NITRITE AS NITROGEN**

Samples BSA-MW-05D-0214 (680-98461-1) and BSA-MW-04D-0214 (680-98461-3) were analyzed for nitrate-nitrite as nitrogen in accordance with EPA Method 353.2. The samples were analyzed on 02/09/2014.

The matrix spike / matrix spike duplicate (MS/MSD) recoveries for batch 314786 were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

The N03+ result is obtained from a calculation incorporating the Nitrate and Nitrite results. Re-analysis is not performed if QC for the calculated analyte does not meet acceptance criteria, provided the QC results for the component analytes are acceptable. Data have been qualified to denote this situation.

Refer to the QC report for details.

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TestAmerica Savannah

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#### **Case Narrative**

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98461-1

SDG: KPS108

#### Job ID: 680-98461-1 (Continued)

Laboratory: TestAmerica Savannah (Continued)

No other difficulties were encountered during the nitrate-nitrite analysis.

All other quality control parameters were within the acceptance limits.

#### SULFATE

Samples BSA-MW-05D-0214 (680-98461-1) and BSA-MW-04D-0214 (680-98461-3) were analyzed for sulfate in accordance with EPA Method 375.4. The samples were analyzed on 02/11/2014.

Sample BSA-MW-04D-0214 (680-98461-3)[5X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No difficulties were encountered during the sulfate analysis.

All quality control parameters were within the acceptance limits.

#### **TOTAL ORGANIC CARBON**

Samples BSA-MW-05D-0214 (680-98461-1) and BSA-MW-04D-0214 (680-98461-3) were analyzed for total organic carbon in accordance with EPA Method 415.1. The samples were analyzed on 02/11/2014.

No difficulties were encountered during the TOC analysis.

All quality control parameters were within the acceptance limits.

#### **DISSOLVED ORGANIC CARBON (DOC)**

Samples BSA-MW-05D-F(0.2)-0214 (680-98461-2) and BSA-MW-04D-F(0.2)-0214 (680-98461-4) were analyzed for Dissolved Organic Carbon (DOC) in accordance with EPA Method 415.1. The samples were analyzed on 02/11/2014 and 02/12/2014.

No difficulties were encountered during the DOC analysis.

All quality control parameters were within the acceptance limits.

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TestAmerica Savannah

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# **Sample Summary**

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

est/	America	Job	ID:	680-	9846	1-1
			5	DG:	<b>KPS</b>	108

Lab Carreta ID		Matrix	Collected	Received
Lab Sample ID	Client Sample ID	Maura		***************************************
680-98461-1	BSA-MW-05D-0214	Water	02/07/14 12:30	02/08/14 10:21
680-98461-2	BSA-MW-05D-F(0.2)-0214	Water	02/07/14 12:30	02/08/14 10:21
680-98461-3	BSA-MW-04D-0214	Water	02/07/14 15:30	02/08/14 10:21
680-98461-4	BSA-MW-04D-F(0.2)-0214	Water	02/07/14 15:30	02/08/14 10:21
680-98461-5	BSA-MW-05D-0214-EB	Water	02/07/14 08:30	02/08/14 10:21
680-98461-6	1Q14 LTM Trip Blank #3	Water	02/07/14 00:00	02/08/14 10:21

# **Method Summary**

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98461-1

SDG: KPS108

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL SAV
8270D	Semivolatife Organic Compounds (GC/MS)	SW846	TAL SAV
RSK-175	Dissolved Gases (GC)	RSK	TAL SAV
6010C	Metals (ICP)	SW846	TAL SAV
310.1	Alkalinity	MCAWW	TAL SAV
325.2	Chloride	MCAWW	TAL SAV
353.2	Nitrogen, Nitrate-Nitrite	MCAWW	TAL SAV
375.4	Sulfate	MCAWW	TAL SAV
415.1	TOC	MCAWW	TAL SAV
415.1	DOC	MCAWW	TAL SAV

#### Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

RSK = Sample Prep And Calculations For Dissolved Gas Analysis In Water Samples Using A GC Headspace Equilibration Technique, RSKSOP-175,

Rev. 0, 8/11/94, USEPA Research Lab

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And its Updates.

#### Laboratory References

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

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TestAmerica Savannah

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## **Definitions/Glossary**

Client: Solutia Inc. TestAmerica Job ID: 680-98461-1 Project/Site: WGK Long Term Monitoring - 1Q14 SDG: KPS108 Qualifiers GC/MS VOA Qualifier Qualifier Description Indicates the analyte was analyzed for but not detected. GC/MS Semi VOA Qualifier Qualifier Description ΪÛ Indicates the analyte was analyzed for but not detected. LCS or LCSD exceeds the control limits Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value GC VOA Qualifier Qualifier Description Indicates the analyte was analyzed for but not detected. RPD of the LCS and LCSD exceeds the control limits Metals Qualifier Qualifier Description Indicates the analyte was analyzed for but not detected. **General Chemistry** Qualifier Qualifier Description ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC exceeds the control limits. U Indicates the analyte was analyzed for but not detected. F1 MS and/or MSD Recovery exceeds the control limits LCS or LCSD exceeds the control limits Glossary Abbreviation These commonly used abbreviations may or may not be present in this report. Listed under the "D" column to designate that the result is reported on a dry weight basis %R Percent Recovery CNF Contains no Free Liquid DER Duplicate error ratio (normalized absolute difference) Dil Fac DL, RA, RE, IN Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample DLC Decision level concentration MDA Minimum detectable activity EDL Estimated Detection Limit MDC Minimum detectable concentration MDL Method Detection Limit ML Minimum Level (Dioxin) NC. Not Calculated ND Not detected at the reporting limit (or MDL or EDL if shown) PQL Practical Quantitation Limit QC Quality Control RFR Relative error ratio RL Reporting Limit or Requested Limit (Radiochemistry) RPD Relative Percent Difference, a measure of the relative difference between two points TEF Toxicity Equivalent Factor (Dioxin)

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TestAmerica Savannah

TEQ

Toxicity Equivalent Quotient (Dioxin)

# **Detection Summary**

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98461-1

Lab Sample ID: 680-98461-1

Lab Sample ID: 680-98461-2

Lab Sample ID: 680-98461-3

SDG: KPS108

#### Client Sample ID: BSA-MW-05D-0214

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	24		5.0		ug/L	5		8260B	Total/NA
Chlorobenzene	460		5.0		ug/L	5		8260B	Total/NA
1,4-Dichlorobenzene	5.1		5.0		ug/L	5		8260B	Total/NA
Ethane	15		1.1		ug/L	1		RSK-175	Total/NA
Methane (TCD)	12000	*	390		ug/L	1		RSK-175	Total/NA
fron	11		0.050		mg/L	1		6010C	Total
									Recoverable
Manganese	0.25		0.010		mg/L	1		6010C	Total
									Recoverable
Chloride	230		5.0		mg/L	5		325.2	Total/NA
Total Organic Carbon	8.9		1.0		mg/L	1		415.1	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Alkalinity	680	*	5.0		mg/L	1	_	310.1	Total/NA
Carbon Dioxide, Free	50		5,0		mg/L	1		310.1	Total/NA

#### Client Sample ID: BSA-MW-05D-F(0.2)-0214

Annahad talenda	Analyte Iron, Dissolved	Result 12	Qualifier	RL 0.050	MDL	Unit mg/L	Dil Fac	<b>D</b>	Method 6010C	Prep Type Dissolved
Ì	Manganese, Dissolved	0.26		0.010		mg/L	1		6010C	Dissolved
	Dissolved Organic Carbon	8.7		1.0		mg/L	1		415.1	Dissolved

#### Client Sample ID: BSA-MW-04D-0214

Analyte	Result	Qualifier	RL	MDL	Unit	Oil Fac	D	Method	Prep Type
Benzene	58		25		ug/L	25		8260B	Total/NA
Chlorobenzene	2200		25		ug/L	25		8260B	Total/NA
1,4-Dichlorobenzene	55		25		ug/L	25		8260B	Total/NA
2-Chlorophenoi	16		10		ug/L	1		8270D	Total/NA
1,4-Dioxane	18		10		ug/L	1		8270D	Total/NA
Ethane	2.4		1.1		ug/L	1		RSK-175	Total/NA
Methane	270		0.58		ug/L	1		RSK-175	Total/NA
Iron	6.7		0.050		mg/L	1		6010C	Total
									Recoverable
Manganese	0.53		0.010		mg/L	1		6010C	Total
									Recoverable
Chloride	98		5.0		mg/L	5		325.2	Total/NA
Sulfate	130		25		mg/L	5		375.4	Total/NA
Total Organic Carbon	4.9		1.0		mg/L	1		415.1	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Alkalinity	520	N. AMERICAN AND PROPERTY AND PROPERTY OF THE P. C. C. C. C. C. C. C. C. C. C. C. C. C.	5,0		mg/L	1	****	310.1	Total/NA
Carbon Dioxide, Free	35		5.0		mg/L	1		310.1	Total/NA

#### Client Sample ID: BSA-MW-04D-F(0.2)-0214

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron, Dissolved	6.7		0.050	Andrew and anti-	mg/L	1		6010C	Dissolved
Manganese, Dissolved	0.53		0.010		mg/L	1		6010C	Dissolved
Dissolved Organic Carbon	4.7		1.0		mg/L	1		415.1	Dissolved

This Detection Summary does not include radiochemical test results.

TestAmerica Savannah

Lab Sample ID: 680-98461-4

# **Detection Summary**

Client: Solutia Inc. TestAmerica Job ID: 680-98461-1 Project/Site: WGK Long Term Monitoring - 1Q14 SDG: KPS108 Client Sample ID: BSA-MW-05D-0214-EB Lab Sample ID: 680-98461-5 No Detections. Client Sample ID: 1Q14 LTM Trip Blank #3 Lab Sample ID: 680-98461-6 No Detections.

This Detection Summary does not include radiochemical test results.

TestAmerica Savannah

MAR 0 6 20

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98461-1

SDG: KPS108

Client Sample ID: BSA-MW-05D-0214

Date Collected: 02/07/14 12:30 Date Received: 02/08/14 10:21 Lab Sample ID: 680-98461-1

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Benzene	24		5.0		ug/L			02/13/14 15:18	
Chlorobenzene	460		5.0		ug/L			02/13/14 15:18	
1,2-Dichlorobenzene	5.0	υ	5.0		ug/L			02/13/14 15:18	
1,3-Dichlorobenzene	5.0	U	5.0		ug/L			02/13/14 15:18	
1,4-Dichlorobenzene	5.1		5.0		ug/L			02/13/14 15:18	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil F
4-Bromofluorobenzene	100		70 - 130				***************************************	02/13/14 15:18	
Dibromofluoromethane	106		70 - 130					02/13/14 15:18	
Toluene-d8 (Surr)	99		70 - 130					02/13/14 15:18	
Method: 8270D - Semivolatile	e Organic Compou	nds (GC/MS	i)						
Analyte		Qualifier	RL	MDL		D	Prepared	Analyzed	DilF
2-Chlorophenol	10	Ū	10		ug/L	_	02/14/14 16:00	02/17/14 13:43	
1,4-Dioxane	10	U	10		ug/L		02/14/14 16:00	02/17/14 13:43	
1,2,4-Trichlorobenzene	10	U	10		ug/L		02/14/14 16:00	02/17/14 13:43	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil F
2-Fluorobiphenyl	64		38 - 130				02/14/14 16:00	02/17/14 13:43	
2-Fluorophenol	63		25 - 130				02/14/14 16:00	02/17/14 13:43	
Nitrobenzene-d5	, 78		39 - 130				02/14/14 16:00	02/17/14 13:43	
Phenol-d5	68		25 - 130				02/14/14 16:00	02/17/14 13:43	
Terphenyl-d14	59		10 - 143				02/14/14 16:00	02/17/14 13:43	
2,4,6-Tribromophenol	75		31 - 141				02/14/14 16:00	02/17/14 13:43	
Method: RSK-175 - Dissolved									
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil F
Ethane	15		1.1		ug/L			02/13/14 16:46	
Ethylene	1.0		1.0		ug/L			02/13/14 16:46	
Methane (TCD)	12000	•	390		ug/L			02/13/14 16:46	
Method: 6010C - Metals (ICP) Analyte		ole Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil F
ron	11	Quantiei	0,050	MPL	mg/L		02/10/14 09:44	02/11/14 17:11	Dit
Manganese	0.25		0,010		mg/L		02/10/14 09:44	02/11/14 17:11	
General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil F
Chloride	230		5.0	***************************************	mg/L			02/11/14 17:17	
Nitrate as N	0,050	U^ (/5	0.050		mg/L			02/09/14 11:10	
Sulfate	5.0	00	5.0		mg/L			02/11/14 12:43	
Total Organic Carbon	8.9		1.0		mg/L			02/11/14 20:07	
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil F
Alkalinity	680		5.0		mg/L			02/09/14 18:45	
Carbon Dioxide, Free	50		5.0		mg/L			02/09/14 18:45	

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98461-1

SDG: KPS108

Client Sample ID: BSA-MW-05D-F(0.2)-0214

Date Collected: 02/07/14 12:30 Date Received: 02/08/14 10:21

Dissolved Organic Carbon

Lab Sample ID: 680-98461-2

02/11/14 23:46

Matrix: Water

Method: 6010C - Metals (ICP) - Diss	olved								
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	12		0.050	PT-1 share and advisors believed as and form Mint	mg/L		02/10/14 09:44	02/11/14 17:25	1
Manganese, Dissolved	0.26		0.010		mg/L		02/10/14 09:44	02/11/14 17:25	1
General Chemistry - Dissolved									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac

1.0

8.7

mg/L

8

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98461-1

SDG: KPS108

#### Client Sample ID: BSA-MW-04D-0214

Date Collected: 02/07/14 15:30

Date Received: 02/08/14 10:21

Lab Sample ID: 680-98461-3

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Benzene	58		25		ug/Ł			02/13/14 14:48	2
Chlorobenzene	2200		25		ug/L			02/13/14 14:48	2
1,2-Dichlorobenzene	25	U	25		ug/L			02/13/14 14:48	2
1,3-Dichlorobenzene	25	U	25		ug/L			02/13/14 14:48	2
1,4-Dichlorobenzene	<b>5</b> 5		25		ug/L			02/13/14 14:48	2
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
4-Bromofluorobenzene	98	Parameter Control of C	70 - 130				3 531 - 314 (1-00	02/13/14 14:48	
Dibromofluoromethane	106		70 - 130					02/13/14 14:48	2
Toluene-d8 (Surr)	97		70 - 130					02/13/14 14:48	2
Method: 8270D - Semivolatile Organi									
Analyte		Qualifier	RL	MDL		0	Prepared	Analyzed	Dil Fa
2-Chlorophenol	16		10		ug/L		02/14/14 16:00	02/17/14 14:07	
1,4-Dioxane	18		10		ug/L		02/14/14 16:00	02/17/14 14:07	
1,2,4-Trichforobenzene	10	U	10		ug/L		02/14/14 16:00	02/17/14 14:07	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil F
2-Fluorobiphenyl	91		38 - 130				02/14/14 16:00	02/17/14 14:07	
2-Fluorophenol	71		25 - 130				02/14/14 16:00	02/17/14 14:07	
Nitrobenzene-d5	85		39 <sub>-</sub> 130				02/14/14 16:00	02/17/14 14:07	
Phenol-d5	62		25 - 130				02/14/14 16:00	02/17/14 14:07	
Terphenyl-d14	79		10 - 143				02/14/14 16:00	02/17/14 14:07	
2,4,6-Tribromophenol	98		31 - 141				02/14/14 16:00	02/17/14 14:07	
Method: RSK-175 - Dissolved Gases							_		
Analyte		Qualifier	RL	MDL		D	Prepared	Analyzed	Dil F
Ethane	2.4		1.1		ug/L			02/13/14 16:59	
Ethylene	1.0	U	1.0		иg/L			02/13/14 16:59	
Methane	270		0,58		ug/L			02/13/14 16:59	
Method: 6010C - Metals (ICP) - Total I <sup>Analyte</sup>		le Qualifier	RL	MDL	l i mi i	D	Prepared	Analyzad	Dil F
		Qualitier	0.050	MIDL			02/10/14 09:44	Analyzed 02/11/14 17:29	- Ull F
ron Vlanganes <i>e</i>	6.7 0.53		0.050		mg/L mg/L		02/10/14 09:44	02/11/14 17:29	
•					_				
General Chemistry Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil F
Chloride	98		5.0		mg/L			02/11/14 17:33	
Nitrate as N		U^* UJ	0.050		mg/L			02/09/14 10:10	
Sulfate	130	4.0	25		mg/L			02/11/14 13:40	
Total Organic Carbon	4.9		1.0		mg/L			02/11/14 20:51	
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil F
Alkalinity	520		5.0		mg/L		/\data	02/09/14 18:36	
Carbon Dioxíde, Free	35		5.0		mg/L			02/09/14 18:36	

Client: Solutia Inc.

Date Received: 02/08/14 10:21

Dissolved Organic Carbon

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98461-1

SDG: KPS108

Client Sample ID: BSA-MW-04D-F(0.2)-0214

Date Collected: 02/07/14 15:30

Lab Sample ID: 680-98461-4

02/12/14 D0:00

Matrix: Water

Method: 6010C - Metals (ICP) - D	issolved									
Analyte	Result	Qualifier	RL	MDL	Unit	1	)	Prepared	Analyzed	Dil Fac
Iron, Dissolved	6.7	TITLE COMMENT FOR THE SECOND SECOND	0,050	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	mg/L			02/11/14 09:35	02/11/14 22:14	1
Manganese, Dissolved	0.53		0.010		mg/L			02/11/14 09:35	02/11/14 22:14	1
General Chemistry - Dissolved										
Analido	Postult	Ounlifier	DI	MOL	Unit		`	Description	Analyzod	Dil Eng

1.0

mg/L

3

Client: Solutia Inc.

2,4,6-Tribromophenol

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98461-1

SDG: KPS108

Client Sample ID: BSA-MW-05D-0214-EB

Date Collected: 02/07/14 08:30 Date Received: 02/08/14 10:21 Lab Sample ID: 680-98461-5

02/14/14 16:00

02/17/14 14:32

Matrix: Water

Method: 8260B - Volatile On Analyte	-	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	Ū	1.0		ug/L			02/13/14 14:18	1
Chlorobenzene	1.0	U	1.0		ug/L			02/13/14 14:18	1
1,2-Dichlorobenzene	1,0	U	1.0		ug/L			02/13/14 14:18	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			02/13/14 14:18	1
1,4-Dichlorobenzene	1.0	U	1,0		ug/L			02/13/14 14:18	1
Surrogate	%Recovery	Qualifier	Limíts				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	94		70 - 130					02/13/14 14:18	1
Dibromofluoromethane	115		70 - 130					02/13/14 14:18	1
			70.400					02/13/14 14:18	-
Toluene-d8 (Surr)	97		70 - 130					02/13/14 14.10	,
		nds (GC/MS						021314 14.10	,
Toluene-d8 (Surr)  Method: 8270D - Semivolat Analyte	ile Organic Compou	nds (GC/MS		MDL	Unit	D	Prepared	Analyzed	Dil Fac
Method: 8270D - Semivolat	ile Organic Compou	Qualifier	5)	MDL	Unit ug/Ł	D	Prepared 02/14/14 16:00		Dil Fac
Method: 8270D - Semivolat Analyte	ile Organic Compou Result	Qualifier U	S) RL	MDL		D		Analyzed	Dil Fac
Method: 8270D - Semivolat Analyte 2-Chlorophenol	ile Organic Compou Result	Qualifier U U	RL 10	MDL	ug/L	D	02/14/14 16:00	Analyzed 02/17/14 14:32	Dil Fac
Method: 8270D - Semivolat Analyte 2-Chlorophenol 1,4-Dioxane	ile Organic Compou Result 10	Qualifier U U U	RL 10	MDL	ug/L ug/L	D	02/14/14 16:00 02/14/14 16:00	Analyzed 02/17/14 14:32 02/17/14 14:32	1 1
Method: 8270D - Semivolat Analyte 2-Chlorophenol 1,4-Dioxane 1,2,4-Trichlorobenzene	ile Organic Compou Result 10 10	Qualifier U U U	RL 10 10 10	MDL	ug/L ug/L	D NOVEMBER 1	02/14/14 16:00 02/14/14 16:00 02/14/14 16:00	Analyzed 02/17/14 14:32 02/17/14 14:32 02/17/14 14:32	1 1
Method: 8270D - Semivolat Analyte 2-Chlorophenol 1,4-Dioxane 1,2,4-Trichlorobenzene	ile Organic Compou Result 10 10 10 %Recovery	Qualifier U U U	RL 10 10 10 10	MDL	ug/L ug/L	D	02/14/14 16:00 02/14/14 16:00 02/14/14 16:00 Prepared	Analyzed 02/17/14 14:32 02/17/14 14:32 02/17/14 14:32 Analyzed	1 1
Method: 8270D - Semivolat Analyte 2-Chlorophenol 1,4-Dioxane 1,2,4-Trichlorobenzene Surrogate 2-Fluorobiphenyl 2-Fluorophenol	ile Organic Compou Result 10 10 10 %Recovery	Qualifier U U U	RL 10 10 10 10 <i>Limits</i> 38 - 130	MDL	ug/L ug/L	D	02/14/14 16:00 02/14/14 16:00 02/14/14 16:00 Prepared 02/14/14 16:00	Analyzed 02/17/14 14:32 02/17/14 14:32 02/17/14 14:32 Analyzed 02/17/14 14:32	1 1
Method: 8270D - Semivolat Analyte 2-Chlorophenol 1,4-Dioxane 1,2,4-Trichlorobenzene  Surrogate 2-Fluorobiphenyl	ile Organic Compou Result 10 10 10 %Recovery 67	Qualifier U U U	RL 10 10 10 10 Limits 38 - 130 25 - 130	MDŁ	ug/L ug/L	D	02/14/14 16:00 02/14/14 16:00 02/14/14 16:00 Prepared 02/14/14 16:00 02/14/14 16:00	Analyzed 02/17/14 14:32 02/17/14 14:32 02/17/14 14:32  Analyzed 02/17/14 14:32 02/17/14 14:32	Dil Fac  1 1 1 1 Dil Fac

31 - 141

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98461-1

SDG: KPS108

Client Sample ID: 1Q14 LTM Trip Blank #3

Date Collected: 02/07/14 00:00 Date Received: 02/08/14 10:21

Lab Sample ID: 680-98461-6

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) MDL Analyzed Dil Fac Result Qualifier RL Unit Prepared Benzene 1.0 Û 1.0 ug/L 02/13/14 13:48 Chlorobenzene 1.0 U 1,0 ug/L 02/13/14 13:48 02/13/14 13:48 1,2-Dichlorobenzene 1.0 U 1.0 ug/L

1,3-Dichlorobenzene 1.0 U ug/L 02/13/14 13:48 1.0 1,4-Dichlorobenzene 1.0 U 1.0 ug/L 02/13/14 13:48

Contact State	Surrogate	%Recovery	Qualifier Limit	5	Prepared	Analyzed	Dil Fac	ł
1	4-Bromofluorobenzene	94	70 - 1	30		02/13/14 13:48	1	2000
Security of the second	Dibromofluoromethane	113	70 - 1	30		02/13/14 13:48	1	0.0000
1	Toluene-d8 (Surr)	95	70 - 1	30		02/13/14 13:48	1	ŝ

# **Surrogate Summary**

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98461-1

SDG: KPS108

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)									
		BFB	DBFM	TOL							
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	(70-130)							
680-98461-1	BSA-MW-05D-0214	100	106	99							
680-98461-3	BSA-MW-04D-0214	98	106	97							
680-98461-5	BSA-MW-05D-0214-EB	94	115	97							
680-98461-6	1Q14 LTM Trip Blank #3	94	113	95							
LCS 680-315401/4	Lab Control Sample	94	105	97							
LCSD 680-315401/5	Lab Control Sample Dup	96	108	102							
MB 680-315401/8	Method Blank	95	112	96	•						

Surrogate Legend

BFB = 4-Bromofluorobenzene

DBFM = Dibromofluoromethane

TOL = Toluene-d8 (Surr)

#### Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)									
		FBP	2FP	NBZ	PHL	TPH	TBP				
Lab Sample ID	Client Sample ID	(38-130)	(25-130)	(39-130)	(25-130)	(10-143)	(31-141)				
680-98461-1	BSA-MW-05D-0214	64	63	78	68	59	75				
680-98461-3	BSA-MW-04D-0214	` 91	71	85	62	79	98				
680-98461-5	BSA-MW-05D-0214-EB	67	67	79	76	78	79				
LCS 680-315638/7-A	Lab Control Sample	74	70	80	70	81	82				
LCSD 680-315638/8-A	Lab Control Sample Dup	75	74	83	76	79	83				
MB 680-315638/6-A	Method Blank	76	76	86	78	90	84				

#### Surrogate Legend

FBP = 2-Fluorobiphenyl

2FP = 2-Fluorophenol

NBZ = Nitrobenzene-d5

PHL ≈ Phenol-d5

TPH = Terphenyl-d14

TBP = 2,4,6-Tribromophenol

TestAmerica Savannah

MAR 0 6 2014

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98461-1

SDG: KPS108

#### Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 680-315401/8

Matrix: Water

Analysis Batch: 315401

Cli	ient Sa <del>n</del>	ple ID:	Meth	od	Blani	k
		Prep	Туре:	То	tal/N/	4

į		MB	MB							
į	Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Benzene	1.0	Ü	1,0	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	ug/L	*1100	21/0/21/2/2/2/2/2/2/4	02/13/14 12:48	1
1	Chlorobenzene	1.0	U	1.0		ug/L			02/13/14 12:48	1
-	1,2-Dichlorobenzene	1.0	U	1.0		ug/L			02/13/14 12:48	1
1000	1,3-Dichlorobenzene	1.0	U	1.0		ug/L			02/13/14 12:48	1
	1,4-Dichlorobenzene	1.0	U	1.0		ug/L			02/13/14 12:48	1
í										

MB MB Analyzed Dil Fac Surrogate %Recovery Qualifier Limits Prepared 4-Bromofluorobenzene 95 70 - 130 02/13/14 12:48 Dibromofluoromethane 112 70 - 130 02/13/14 12:48 70 - 130 02/13/14 12:48 Toluene-d8 (Surr) 96

Lab Sample ID: LCS 680-315401/4

Matrix: Water

1,4-Dichlorobenzene

Analysis Batch: 315401

Client Sample ID: Lab Control Sample
Pren Type: Total/NA

76 - 124

Spike LCS LCS %Rec. Analyte Added Result Qualifier Unit %Rec Limits Benzene 50.0 48.9 ug/L 98 74 - 123 50.0 49.8 ug/L 100 79.120 Chlorobenzene 46.7 93 77 - 124 50.0 ug/L 1,2-Dichlorobenzene 92 79 - 123 1,3-Dichlorobenzene 50.0 46.2 ug/L

45.6

ug/L

50.0

LCS LCS %Recovery Qualifier Limits Surrogate 70 - 130 4-Bromofluorobenzene 94 Dibromofluoromethane 105 70.130 70 - 130 Toluene-d8 (Sum) 97

Lab Sample ID: LCSD 680-315401/5

Matrix: Water

Analysis Batch: 315401

Client Sample ID: Lab Control Sample Dup Prep Type: Total/NA

91

Analysis Batom 010401	Spike	LCSD	LCSD				%Rec.		RPD
Analyte	Added	Result		Unit	Ð	%Rec	Limits	RPD	Limit
Benzene	50,0	50.4		ug/L	- ,	101	74 - 123	3	30
Chlorobenzene	50.0	50.4	4	រេg/L		101	79 - 120	1	30
1,2-Dichlorobenzene	50.0	47.4	4	រេg/L		95	77 - 124	1	30
1,3-Dichlorobenzene	50.0	47.2	1	ug/L		94	79 - 123	2	30
1,4-Dichlorobenzene	50.0	46.6	4	սց/L		93	76 - 124	2	30

	LCSD	LCSD	
Surrogate	%Recovery		Limits
4-Bromofluorobenzene	96		70 - 130
Dibromofluoromethane	108		70 - 130
Toluene-d8 (Surr)	102		70 - 130

TestAmerica Savannah

MAR 0 6 2014

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98461-1

SDG: KPS108

# Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 680-315638/6-A

Matrix: Water

Analysis Batch: 315832

Client Sample ID: Method Blank
Pren Tyne: Total/NA

Prep Batch: 315638

i		MB	MB .							
	Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	2-Chlorophenol	10	U	10	NAME OF TAXABLE PARTY OF TAXABLE PARTY.	ug/L	****	02/14/14 16:00	02/17/14 12:05	1
	1,4-Dioxane	10	U	10		ug/L		02/14/14 16:00	02/17/14 12:05	1
	1,2,4-Trichtorobenzene	10	U	10		ug/L		02/14/14 16:00	02/17/14 12:05	1
i										

MB MB

3							
	Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
	2-Fluorobiphenyl	76	-	38 - 130	02/14/14 16:00	02/17/14 12:05	1
	2-Fluorophenol	76		25 . 130	02/14/14 16:00	02/17/14 12:05	1
- Care Contract	Nitrobenzene-d5	86		39 - 130	02/14/14 16:00	02/17/14 12:05	1
	Phenol-d5	78		25 - 130	02/14/14 16:00	02/17/14 12:05	1
	Terphenyl-d14	90		10 - 143	02/14/14 16:00	02/17/14 12:05	1
a constant	2,4,6-Tribromophenol	84		31 - 141	02/14/14 16:00	02/17/14 12:05	1
•	***						

Lab Sample ID: LCS 680-315638/7-A

Matrix: Water

Analysis Batch: 315832

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 315638

•	Spike	LC\$	LCS				%Rec.
Analyte	Added		Qualifier	Unit	D	%Rec	Limits
4-Chloroaniine	100	14.1	J *	ug/L		(14)	42 - 130
2-Chlorophenol	100	73.3		ug/L		73	57 - 130
1,4-Dioxane	100	65.1		ug/L		65	35 - 130
1,2,4-Trichlorobenzene	100	54.8		ug/L		55	42 - 130

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
2-Fluorobiphenyl	74		38 - 130
2-Fluorophenol	70		25 - 130
Nitrobenzene-d5	80		39 - 130
Phenol-d5	70		25 - 130
Terphenyl-d14	81		10 - 143
2,4,6-Tribromophenol	82		31 - 141

Lab Sample ID: LCSD 680-315638/8-A

Matrix: Water

Analysis Batch: 315832

Client Sample	D: Lab	Control	Sample Dup
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Prep Type: Total/NA

Prep Batch: 315638

		Spike	LCSD	LCSD				%Rec.		RPD
	Analyte	Added	Result	Qualifier	Unit	(	%Rec.	Limits	RPD	Limit
	4-Chloroaniline	100	12.3	J *	ug/L		(12)	42 - 130	14	50
	2-Chlorophenol	100	75.2		ug/L		75	57 _ 130	3	50
1	1,4-Dioxane	100	62.8		ug/L		63	35.130	4	50
	1,2,4-Trichlorobenzene	100	56.5		ug/L		56	42 - 130	3	50

LCSD LCSD

Surrogate	%Recovery	Qualifier	Limits
2-Fluorobiphenyl	75		38 - 130
2-Fluorophenol	74		25 - 130
Nitrobenzene-d5	83		39 - 130
Phenol-d5	76		25 - 130
Terphenyl-d14	79		10 - 143
2,4,6-Tribromophenol	83		31 - 141

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98461-1

SDG: KPS108

#### Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 680-315441/7	Client Sample ID: Method Blank
Matrix: Water	Prep Type: Total/NA

Analysis Batch: 315441

MB MA Dil Fac Analyte Result Qualifier RL MOL Unit Prepared Analyzed Ethane 1.1 U 1.1 ug/L 02/13/14 12:45 02/13/14 12:45 Ethylene 1.0 U 1.0 ug/L Methane 0.58 U 0.58 ug/L 02/13/14 12:45 02/13/14 12:45 Methane (TCD) 390 U 390 ug/L

Lab Sample ID: LCS 680-315441/3

Client Sample ID: Lab Control Sample
Matrix: Water

Prep Type: Total/NA

Analysis Batch: 315441

Spike LCS LCS %Rec. Analyte Added Result Qualifier Unit %Rec Limits Ethane 288 313 ug/L 108 75 - 125 Ethylene 112 75 .. 125 269 302 ug/L 75 \_ 125 102 Methane 154 157 ug/L

Lab Sample ID: LCS 680-315441/5

Client Sample ID: Lab Control Sample
Matrix: Water

Prep Type: Total/NA

Analysis Batch: 315441

 Spike
 LCS LCS
 %Rec.

 Analyte
 Added
 Result Qualifier
 Unit
 D %Rec Limits

 Methane (TCD)
 1920
 1480
 ug/L
 77
 75 - 125

Lab Sample ID: LCSD 680-315441/4

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 315441

%Rec. RPD Spike LCSD LCSD Limits Analyte Added Result Qualifier Unit %Rec RPD Limit Ethane 288 301 ug/L 104 75 \_ 125 30 107 75 - 125 30 Ethylene 269 288 ug/L ug/L 99 75 . 125 3 30 Methane 154 153

Lab Sample ID: LCSD 680-315441/6

Matrix: Water

Analysis Batch: 315441

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

%Rec. RPD Spike LCSD LCSD Analyte Added Result Qualifier Unit D %Rec Limits Limit 32 Methane (TCD) 1920 2040 ug/L 106 75 - 125 30

#### Method: 6010C - Metals (ICP)

Lab Sample ID: MB 680-314841/1-A

Matrix: Water

Analysis Batch: 315187

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 314841

	IND	IND							
Analyte	Result	Qualifier	RL	MDL	Unit	Đ	Prepared	Analyzed	Dil Fac
Iron	0.050	U	0.050		mg/L		02/10/14 09:44	02/11/14 15:46	1
Iron, Dissolved	0.050	ឋ	0.050		mg/L		02/10/14 09:44	02/11/14 15:46	1
Manganese	0.010	U	0.010		mg/L		02/10/14 09:44	02/11/14 15:46	1
Manganese, Dissolved	0.010	ឋ	0.010		mg/L		02/10/14 09:44	02/11/14 15:46	1

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98461-1

SDG: KPS108

Method: 6010C - Metal	s (ICP)	(Continued)
-----------------------	---------	-------------

Lab Sample ID: LCS 680-314841/2-A Matrix: Water Analysis Batch: 315187	Client Sample ID: Lab Control Sample Prep Type: Total Recoverable Prep Batch: 314841							
	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Iron	5.00	5.03		mg/L		101	75 - 125	
Iron, Dissolved	5.00	5.03		mg/L		101	75 - 125	
Manganese	0.500	0.504		mg/L		101	75 - 125	
Manganese, Dissolved	0,500	0.504		mg/L		101	75 - 125	

Lab Sample ID: MB 680-315011/1-A

Matrix: Water

Analysis Batch: 315187

Client Sample ID: Method Blank Prep Type: Total Recoverable

Prep Batch: 315011

i		MB	мв							
	Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Iron, Dissolved	0.050	υ	0.050		mg/L		02/11/14 09:35	02/11/14 22:05	1
	Manganese, Dissolved	0.010	υ	0.010		mg/L		02/11/14 09:35	02/11/14 22:05	1

Lab Sample ID: LCS 680-315011/2-A

Matrix: Water

Analysis Batch: 315187

Client Sample ID: Lab Control Sample

Prep Type: Total Recoverable

ì	Analysis Batch: 315187							Prep	Batch: 3	15011
-		Spike	LCS	LCS				%Rec.		
-	Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits		
	Iron, Dissolved	 5.00	5.00	APPENDED TO THE PARTY OF THE PA	mg/L		100	75 - 125		
	Manganese, Dissolved	0.500	0.519		mg/L		104	<sup>*</sup> 75 <sub>-</sub> 125		

Lab Sample ID: 680-98461-4 MS

Matrix: Water

Client !	Sample	ın.	BSA-MW-04D-F(0.2)-0214
CHEIL .	Sample	10.	DOM-11111-04D-1 (0,2)-0214

Prep Type: Dissolved

į	Analysis Batch: 315187									Prep	Batch:	315011
* 101101		Sample	Sample	Spike	MS	MS				%Rec.		
	Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits		
	Iron, Dissolved	6.7		5.00	11.B		mg/L		102	75 - 125	***************************************	210000000000000000000000000000000000000
-	Manganese, Dissolved	0,53		0.500	1.06		mg/L		105	75 - 125		

Lab Sample ID: 680-98461-4 MSD

Matrix: Water

Analysis Batch: 315187

Client Sample ID: BSA-MW-04D-F(0.2)-0214

Prep Type: Dissolved Prep Batch: 315011

Spike MSD MSD %Rec. RPD Sample Sample Result Qualifier Added Result Qualifier Limits Analyte Unit %Rec Limit 6.7 5,00 fron, Dissolved 11.7 101 75 - 125 20 mg/L Manganese, Dissolved 0,53 0.500 1.06 mg/L 104 75 - 125 20

# Method: 310.1 - Alkalinity

Lab Sample ID: MB 680-314807/5

Matrix: Water

Analysis Batch: 314807

Client Sample ID: Method Blank

Prep Type: Total/NA

1		MB	MB							
1	Analyte		•	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Alkalinity	5.0	Ū	5.0	20000 III III III III III III III III II	mg/L			02/09/14 16:39	1
	Carbon Dioxide, Free	5.0	U	5,0		mg/L			02/09/14 16:39	1

Client: Solutia Inc.	ing 10	14.4	QC	C Samı	ole Res	sul	ts			Т	estAme	rica Job ID		
Project/Site: WGK Long Term Monitor													SDG: KI	-5108
lethod: 310.1 - Alkalinity (Cor	ntinued	4)					· · · · · · · · · · · · · · · · · · ·							
Lab Sample ID: LCS 680-314807/6 Matrix: Water									Clie	nt	Sample	ID: Lab Co Prep T	ontrol S ype: To	•
Analysis Batch: 314807														
A				Spike			LCS		_			%Rec.		
Analyte Alkalinity				Added 250		246	Qualifier	Unit mg/L		, 	%Rec 98	Limits 80 - 120		
·	_													
Lab Sample ID: LCSD 680-314807/2 Matrix: Water	26							CI	ient Sa	ım	ple ID: L	ab Contro		-
Analysis Batch: 314807												Prep i	ype: To	(al/INA
				Spike	LC	SD	LCSD					%Rec.		RPI
Analyte				Added	Re	ult	Qualifier	Unit		)	%Rec	Limits	RPD	Limi
Alkalinity				250		220		mg/L			88	80 - 120	11	30
lethod: 325.2 - Chloride		**												
Lab Sample ID: MB 680-315165/6						,					Client S	ample ID:	Method	Blanl
Matrix: Water												-	ype: To	
Analysis Batch: 315165												-		
	_		MB						_	_				
Analyte Chloride	R		Qualifier U		RL 1.0		MDL Unit mg/L	***************************************	D	Pr	epared	Analyz 02/11/14		Dil Fac
Lab Sample ID: LCS 680-315165/12									Clie	nt	Sample	ID: Lab C		
Matrix: Water Analysis Batch: 315165												Prep I	ype: To	tai/NA
Allalysis Batch. 313103				Spike	ı	cs	LCS					%Rec.		
Analyte				Added	Re	ult	Qualifier	Unit		)	%Rec	Limits		
Chloride		Patentanionities		25.0	2	5.7		mg/L			103	85 - 115		PROPERTY AND ADDRESS OF THE PARTY AND ADDRESS
Lab Sample ID: 680-98461-3 MS									Cli	en	t Sampl	e ID: B\$A-	-MW-04E	D-0214
Matrix: Water												Prep T	ype: To	tai/NA
Analysis Batch: 315165														
A natura	Sample			Spike		-	MS	l lada			e/Dee	%Rec.		
Analyte Chloride	Result 98	Qualif	ner 	25.0		sult 121	Qualifier	Unit mg/L			%Rec 90	Limits 85 . 115	mooon.	
i at Campia ID. 000 00404 2 840D									O.		4 6	I- ID: DOA	B#14/ 0 4F	
Lab Sample ID: 680-98461-3 MSD Matrix: Water									UII	en	т затрі	le ID: BSA- Prop T	ype:To	
Analysis Batch: 315165												Lieb i	ype. 10	Lawith
maryoto Batom o 10100	Sample	Samp	le	Spike	N	SD	MSD					%Rec.		RPC
Analyte	Result	Qualif	Ner	Added	Re	ult	Qualifier	Unit		)	%Rec	Limits	RPD	Limi
Chloride	98			25.0	# 1007 # 1007 1, 1000 1, 1000 1, 1000 1, 1000 1, 1000 1, 1000 1, 1000 1, 1000 1, 1000 1, 1000 1, 1000 1, 1000 1	121		mg/L			91	85 - 115	0	30
lethod: 353.2 - Nitrogen, Nitra	te-Nifr	rite	.,	· · · · · · · · · · · · · · · · · · ·	.,,,,,,,,	.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			***************************************	******	***************************************	Antonio (1866) de la Constantina (1866) de la		

TestAmerica Savannah

Prep Type: Total/NA

Analyzed

02/09/14 11:08

Prepared

D

MAR 0 6 20

RL

0.050

MDL Unit

mg/L

MB MB

0.050 U^

Result Qualifier

Matrix: Water

Analyte

Nitrate as N

Analysis Batch: 314786

Dil Fac

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98461-1

SDG: KPS108

#### Method: 353.2 - Nitrogen, Nitrate-Nitrite (Continued)

Client Sample ID: Lab Control Sample Lab Sample ID: LCS 680-314786/14 Matrix: Water Prep Type: Total/NA Analysis Batch: 314786 Spike LCS LCS %Rec. Result Qualifier Unit %Rec Limits Analyte Added Nitrate as N 0.500 0.549 ^ mg/L 110 90 - 110 Nitrate Nitrite as N 1.00 1.05 mg/L 105 90 - 110

0.504

mg/L

101

90 - 110

Client Sample ID: BSA-MW-05D-0214

Client Sample ID: BSA-MW-05D-0214

Client Sample ID: Method Blank

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Type: Total/NA

Prep Type: Total/NA

Prep Type: Total/NA

0.500

Lab Sample ID: 680-98461-1 MS

Matrix: Water

Nitrite as N

Analysis Batch: 314786

Analysis Battin & Misses											
	Sample	Sample	Spike	MS	MS				%Rec.		
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit		/Rec	Limits		
Nitrate as N	0.050	U ^	0.500	0.555	F1 ^	mg/L	~~~~	111	90 - 110	 	
Nitrate Nitrite as N	0.050		1.00	1.06		mg/L		106	90.110		
Nitrite as N	0.050		0.500	0.506		ma/L		101	90.110		

Lab Sample ID: 680-98461-1 MSD

Matrix: Water

	Analysis Batch: 314786											
		Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
į	Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limíts	RPD	Limit
	Nitrate as N	0.050	U ^	0.500	0.552	٨	mg/L	hand.	110	90 - 110	0	10
i	Nitrate Nitrite as N	0.050		1.00	1.06		mg/L		106	90 - 110	0	10
	Nitrite as N	0.050		0.500	0.507		mg/L		101	90 - 110	0	10

Lab Sample ID: MB 680-315033/13

Matrix: Water

Analysis Batch: 315033

	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.050	Π,	0.050		mg/L			02/09/14 10:04	1

Lab Sample ID: LCS 680-315033/14

Matrix: Water

Analysis Batch: 315033

rinal join Date in Citation									
		Spike	LCS	LCS				%Rec.	
Analyte		Added	Result	Qualifier	Unit	D 9	Bee	Limits	
Nitrate as N	AVENUE AV	0.500	0.557	۸ •	mg/L	7	111	90 110	
Nitrate Nitrite as N		1.00	1.06		mg/L	,	106	90 - 110	
Nitrite as N		0.500	0.504		mg/L		101	90 - 110	

Method: 375.4 - Sulfate

Lab Sample ID: MB 680-315167/27

Matrix: Water

Analysis Batch: 315167

marysis batch. Stotor		
	MB	MB
nalvte	Result	Qual

alifier Sulfate 5.0 U

RL MDL Unit

mg/L

Prepared

Analyzed 02/11/14 16:25

Client Sample ID: Method Blank

Dil Fac

TestAmerica Savannah

Prep Type: Total/NA

5,0

TestAmerica Job ID: 680-98461-1 Client: Solutia Inc. Project/Site: WGK Long Term Monitoring - 1Q14 SDG: KPS108 Method: 375.4 - Sulfate (Continued) Lab Sample ID: LCS 680-315167/23 Client Sample ID: Lab Control Sample Matrix: Water Prep Type: Total/NA Analysis Batch: 315167 LCS LCS Spike %Rec Analyte Added Result Qualifier Limits Unit n %Rec Sulfate 20.0 20.0 mg/L 100 75 - 125 Method: 415.1 - DOC Lab Sample ID: MB 680-315326/2-A Client Sample ID: Method Blank Matrix: Water Prep Type: Dissolved Analysis Batch: 315320 MR MR Analyte Result Qualifier MDL Unit Analyzed Dil Fac Dissolved Organic Carbon 1.0 Ü 1.0 mg/L 02/11/14 22:21 Lab Sample ID: LCS 680-315326/1-A Client Sample ID: Lab Control Sample Matrix: Water Prep Type: Dissolved Analysis Batch: 315320 Spike LCS LCS %Rec. Analyte Added Result Qualifier Limits Unit %Rec Dissolved Organic Carbon 20.0 21,5 mg/L 80 - 120 Method: 415.1 - TOC Lab Sample ID: MB 680-315319/24 Client Sample ID: Method Blank Matrix: Water Prep Type: Total/NA Analysis Batch: 315319 мв мв Analyte Result Qualifier MDL Unit Prepared Analyzed Dil Fac Total Organic Carbon 1.0 Ü 10 02/11/14 17:31 mg/L Lab Sample ID: LCS 680-315319/25 Client Sample ID: Lab Control Sample Matrix: Water Prep Type: Total/NA Analysis Batch: 315319 Spike LCS LCS %Rec. Added Result Qualifier Unit %Rec Limits Total Organic Carbon 20.0 21.5 107 80 - 120 mg/L

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Client Sample ID: BSA-MW-04D-0214

Prep Type: Total/NA

RPD

Limit

DIL DIL

4.85

Result Qualifier

Unit

mg/L

Lab Sample ID: 680-98461-3 DU

Sample Sample

4.9

Result Qualifier

Analysis Batch: 315319

Matrix: Water

Total Organic Carbon

Analyte

# **QC Association Summary**

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98461-1

SDG: KPS108

#### GC/MS VOA

Analysis	Batch:	315401
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Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batch
680-98461-1	BSA-MW-05D-0214	Total/NA	Water	8260B	
680-98461-3	BSA-MW-04D-0214	Total/NA	Water	8260B	
680-98461-5	BSA-MW-05D-0214-EB	Total/NA	Water	8260B	
680-98461-6	1Q14 LTM Trip Blank #3	Total/NA	Water	8260B	
LCS 680-315401/4	Lab Control Sample	Total/NA	Water	8260B	
LCSD 680-315401/5	Lab Control Sample Dup	Total/NA	Water	8260B	
MB 680-315401/8	Method Blank	Total/NA	Water	8260B	
1					

#### GC/MS Semi VOA

#### Prep Batch: 315638

Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batch
680-98461-1	BSA-MW-05D-0214	Total/NA	Water	3520C	
680-98461-3	BSA-MW-04D-0214	Total/NA	Water	3520C	
680-98461-5	BSA-MW-05D-0214-EB	Total/NA	Water	3520C	
LCS 680-315638/7-A	Lab Control Sample	Total/NA	Water	3520C	
LCSD 680-315638/8-A	Lab Control Sample Dup	Total/NA	Water	3520C	
MB 680-315638/6-A	Method Blank	Total/NA	Water	3520C	

#### Analysis Batch: 315832

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-98461-1	BSA-MW-05D-0214	Total/NA	Water	8270D	315638
680-98461-3	BSA-MW-04D-0214	Total/NA	Water	8270D	315638
680-98461-5	BSA-MW-05D-0214-EB	Total/NA	Water	8270D	315638
LCS 680-315638/7-A	Lab Control Sample	Total/NA	Water	8270D	315638
LCSD 680-315638/8-A	Lab Control Sample Dup	Total/NA	Water	8270D	315638
MB 680-315638/6-A	Method Blank	Total/NA	Water	8270D	315638

## **GC VOA**

# Analysis Batch: 315441

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-98461-1	BSA-MW-05D-0214	Total/NA	Water	RSK-175	
680-98461-3	BSA-MW-04D-0214	Total/NA	Water	RSK-175	
LCS 680-315441/3	Lab Control Sample	Total/NA	Water	RSK-175	
LCS 680-315441/5	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 680-315441/4	Lab Control Sample Dup	Total/NA	Water	RSK-175	
LCSD 680-315441/6	Lab Control Sample Dup	Total/NA	Water	RSK-175	
MB 680-315441/7	Method Blank	Total/NA	Water	R\$K-175	

# Metals

#### Prep Batch: 314841

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-98461-1	BSA-MW-05D-0214	Total Recoverable	Water	3005A	
680-98461-2	BSA-MW-05D-F(0.2)-0214	Dissolved	Water	3005A	
680-98461-3	BSA-MW-04D-0214	Total Recoverable	Water	3005A	
LCS 680-314841/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
MB 680-314841/1-A	Method Blank	Total Recoverable	Water	3005A	

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# **QC Association Summary**

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98461-1

SDG: KPS108

# Metals (Continued)

Prep Batch: 315	01	1
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Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-98461-4	BSA-MW-04D-F(0.2)-0214	Dissolved	Water	3005A	
680-98461-4 MS	BSA-MW-04D-F(0.2)-0214	Dissolved	Water	3005A	!
680-98461-4 MSD	BSA-MW-04D-F(0.2)-0214	Dissolved	Water	3005A	
LCS 680-315011/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
MB 680-315011/1-A	Method Blank	Total Recoverable	Water	3005A	

#### Analysis Batch: 315187

Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batch
680-98461-1	BSA-MW-05D-0214	Total Recoverable	Water	6010C	314841
680-98461-2	BSA-MW-05D-F(0,2)-0214	Dissolved	Water	6010C	314841
680-98461-3	BSA-MW-04D-0214	Total Recoverable	Water	6010C	314841
680-98461-4	BSA-MW-04D-F(0.2)-0214	Dissolved	Water	6010C	315011
680-98461-4 MS	BSA-MW-04D-F(0.2)-0214	Dissolved	Water	6010C	315011
680-98461-4 MSD	BSA-MW-04D-F(0.2)-0214	Dissolved	Water	6010C	315011
LCS 680-314841/2-A	Lab Control Sample	Total Recoverable	Water	6010C	31484
LCS 680-315011/2-A	Lab Control Sample	Total Recoverable	Water	6010C	315011
MB 680-314841/1-A	Method Blank	Total Recoverable	Water	6010C	314841
MB 680-315011/1-A	Method Blank	Total Recoverable	Water	6010C	31501

# **General Chemistry**

#### Analysis Batch: 314786

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-98461-1	B\$A-MW-05D-0214	Total/NA	Water	353.2	
680-98461-1 MS	BSA-MW-05D-0214	Total/NA	Water	353.2	
680-98461-1 MSD	BSA-MW-05D-0214	Total/NA	Water	353.2	
LCS 680-314786/14	Lab Control Sample	Total/NA	Water	353.2	
MB 680-314786/13	Method Blank	Total/NA	Water	353.2	

# Analysis Batch: 314807

1	Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
-	680-98461-1	BSA-MW-05D-0214	Total/NA	Water	310.1	
	680-98461-3	BSA-MW-04D-0214	Total/NA	Water	310.1	
-	LCS 680-314807/6	Lab Control Sample	Total/NA	Water	310.1	
Total Control	LCSD 680-314807/26	Lab Control Sample Dup	Total/NA	Water	310.1	
	MB 680-314807/5	Method Blank	Total/NA	Water	.310.1	

#### Analysis Batch: 315033

į	Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batch
i	680-98461-3	BSA-MW-04D-0214	Total/NA	Water	353.2	
	LCS 680-315033/14	Lab Control Sample	Total/NA	Water	353.2	
	MB 680-315033/13	Method Blank	Total/NA	Water	353.2	

#### Analysis Batch: 315165

	Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batch
	NOW TO BE PROTECTED TO THE PROTECT OF THE PARTY OF THE PA		<del>' -' -</del>			Fieh Datch
- 1	680-98461-1	BSA-MW-05D-0214	Total/NA	Water	325.2	
	680-98461-3	BSA-MW-04D-0214	Total/NA	Water	325.2	
1	680-98461-3 MS	BSA-MW-04D-0214	Total/NA	Water	325.2	
- Company	680-98461-3 MSD	BSA-MW-04D-0214	Total/NA	Water	325.2	
	LCS 680-315165/12	Lab Control Sample	Total/NA	Water	325.2	

# **QC Association Summary**

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98461-1

SDG: KPS108

# General Chemistry (Continued) Analysis Batch: 315165 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 680-315165/6	Method Blank	Total/NA	Water	325.2	

#### Analysis Batch: 315167

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-98461-1	BSA-MW-05D-0214	Total/NA	Water	375.4	
680-98461-3	BSA-MW-04D-0214	Total/NA	Water	375.4	
LCS 680-315167/23	Lab Control Sample	Total/NA	Water	375.4	
MB 680-315167/27	Method Blank	Total/NA	Water	375.4	

#### Analysis Batch: 315319

	Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method P	rep Batch
	680-98461-1	BSA-MW-05D-0214	Total/NA	Water	415.1	
1	680-98461-3	BSA-MW-04D-0214	Total/NA	Water	415.1	:
	680-98461-3 DU	BSA-MW-04D-0214	Total/NA	Water	415.1	
	LCS 680-315319/25	Lab Control Sample	Total/NA	Water	415.1	
- Participation	MB 680-315319/24	Method Blank	Total/NA	Water	415.1	

#### Analysis Batch: 315320

Lab Sample ID 680-98461-2 680-98461-4	Client Sample ID BSA-MW-05D-F(0.2)-0214 BSA-MW-04D-F(0.2)-0214		Prep Type Dissolved Dissolved	Matrix Water Water	Method 415.1 415.1	Prep Batch
· LCS 680-315326/1-A	Lab Control Sample	•	Dissolved	Water ·	415.1	· 315326
MB 680-315326/2-A	Method Blank		Dissolved	Water	415.1	315326

#### Filtration Batch: 315326

41.1	Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batch
	LCS 680-315326/1-A	Lab Control Sample	Dissolved	Water	FILTRATION	
-	MB 680-315326/2-A	Method Blank	Dissolved	Water	FILTRATION	

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#### Lab Chronicle

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98461-1

SDG: KPS108

Client Sample ID: BSA-MW-05D-0214

Date Collected: 02/07/14 12:30 Date Received: 02/08/14 10:21 Lab Sample ID: 680-98461-1

Matrix: Water

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		5	315401	02/13/14 15:18	MMT	TAL SAV
Total/NA	Prep	3520C			315638	02/14/14 16:00	RBS	TAL SAV
Total/NA	Analysis	8270D		1	315832	02/17/14 13;43	SMC	TAL SAV
Total/NA	Analysis	RSK-175		1	315441	02/13/14 16:46	TAR	TAL SAV
Total Recoverable	Prep	3005A			314841	02/10/14 09:44	BJB	TAL SAV
Total Recoverable	Analysis	6010C		1	315187	02/11/14 17:11	BCB	TAL SAV
Total/NA	Analysis	353.2		1	314786	02/09/14 11:10	GRX	TAL SAV
Total/NA	Analysis	310.1		1	314807	02/09/14 18:45	LBH	TAL SAV
Total/NA	Analysis	325.2		5	315165	02/11/14 17:17	JME	TAL SAV
Total/NA	Analysis	375.4		1	315167	02/11/14 12:43	JME	TAL SAV
Total/NA	Analysis	415.1		1	315319	02/11/14 20:07	CMP	TAL SAV

Client Sample ID: BSA-MW-05D-F(0.2)-0214

Date Collected: 02/07/14 12:30

Date Received: 02/08/14 10:21

Lab Sample ID: 680-98461-2

Matrix: Water

-		Batch	Batch		Dilution	Batch	Prepared		
1	Ргер Туре	Туре '	Method	Run	Factor	Number	or Analyzed '	Analyst	Lab
-	Dissolved	Prep	3005A			314841	02/10/14 09:44	B <b>J</b> B	TAL SAV
	Dissolved	Analysis	6010C		1	315187	02/11/14 17:25	BCB	TAL SAV
	Dissolved	Analysis	415.1		1	315320	02/11/14 23:46	CMP	TAL SAV

Client Sample ID: BSA-MW-04D-0214

Date Collected: 02/07/14 15:30

Date Received: 02/08/14 10:21

Lab Sample ID: 680-98461-3

Matrix: Water

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		25	315401	02/13/14 14:48	MMT	TAL SAV
Total/NA	Ргер	3520C			315638	02/14/14 16:00	RB\$	TAL SAV
Total/NA	Analysis	8270D		1	315832	02/17/14 14:07	SMC	TAL SAV
Total/NA	Analysis	RSK-175		1	315441	02/13/14 16:59	TAR	TAL \$AV
Total Recoverable	Prep	3005A			314841	02/10/14 09:44	взв	TAL SAV
Total Recoverable	Analysis	6010C		1	315187	02/11/14 17:29	BCB	TAL SAV
Totai/NA	Analysis	310,1		1	314807	02/09/14 18:36	LBH	TAL SAV
Total/NA	Analysis	353.2		1	315033	02/09/14 10:10	GRX	TAL SAV
Total/NA	Analysis	325.2		5	315165	02/11/14 17:33	JME	TAL SAV
Total/NA	Analysis	375.4		5	315167	02/11/14 13:40	JME	TAL SAV
Total/NA	Analysis	415.1		1	315319	02/11/14 20:51	CMP	TAL SAV

TestAmerica Savannah

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#### Lab Chronicle

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98461-1

SDG: KPS108

Client Sample ID: BSA-MW-04D-F(0.2)-0214

Date Collected: 02/07/14 15:30 Date Received: 02/08/14 10:21 Lab Sample ID: 680-98461-4

Matrix: Water

4		Batch	Batch		Dilution	Batch	Prepared		
-	Ргер Туре	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
100	Dissolved	Prep	3005A			315011	02/11/14 09:35	BJB	TAL SAV
	Dissolved	Analysis	6010C		1	315187	02/11/14 22:14	BCB	TAL SAV
	Dissolved	Analysis	415.1		1	315320	02/12/14 00:00	CMP	TAL SAV

Client Sample ID: BSA-MW-05D-0214-EB

Date Collected: 02/07/14 08:30

Date Received: 02/08/14 10:21

Lab Sample ID: 680-98461-5

Lab Sample ID: 680-98461-6

Matrix: Water

Matrix: Water

		Batch	Batch		Dilution	Batch	Prepared		
i	Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
	Total/NA	Analysis	8260B		1	315401	02/13/14 14:18	MMT	TAL SAV
	Total/NA	Prep	3520C			315638	02/14/14 16:00	RBS	TAL SAV
-	Total/NA	Analysis	8270D		1	315832	02/17/14 14:32	SMC	TAL SAV

Client Sample ID: 1Q14 LTM Trip Blank #3

Date Collected: 02/07/14 00:00

Date Received: 02/08/14 10:21

Batch Batch Dilution Batch Prepared Prep Type Туре Method Run Factor Number or Analyzed Analyst Total/NA 8260B 315401 MMT TAL SAV Analysis 02/13/14 13:48

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

W-3

#### Savannah

5102 LaRoche Avenue

Chain of Custody Record

TestAmerica

Savannah, GA 31404 phone 912,354,7858 fax 912,352,0165 TestAmerica Laboratories, Inc. Client Contact Project Manager: Bob Billman Site Contact: Michael Corbett 2011/4 COC No: URS Corporation Tel/Fax: (314) 743-4108 Lab Contact: Michele Kersey Forley COCs of / 1001 Highlands Plaza Drive West, Suite 300 Analysis Turnaround Time St. Louis, MO 63110 Calendar (C) or Work Days (W) Chloride by 325.2/Sulfate by 375.4 (314) 429-0100 Phone TAT if different from Below Standard (314) 429-0462 FAX Dissolved FeAfn by 6010C SDG No. 2 weeks Project Name: 1Q14 LTM GW Sampling 1 week Site: Solutia WG Krummrich Facility 2 days OCs by 8260B Nitrate by 353.2 PO# 1 day FOC by 415.1 Sample Sample Sample Sample Identification Date Time Matrix Cont. Type Sample Specific Notes: BSA-MW-05D 2714 1230 Water . 3 2 3 2 1230 Water 2 F(0,2)-0214 1323 1530 ົ2 1530 0820 -mw-050-6814-EB 132 0830 RECISED ID DOWN MENONED d.Ragnalden IQ14 LTM Trip Blank # 3 2/1/14 00:00 6 Water 2 1 4 1 1 2 3,1 3 4 2 Preservation Used: 1= Ice. 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other Possible Hazard Identification Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month) Non-Hazard \_\_\_nown Return To Client - Flammable Skin Irritant son B **Maj**sposal By Lab Special Instructions/QC Requirements & Comments: 680-98461 6.6°C 2/7/14 1600 Relinguished bys: Company: Received by: Сотралу: Date/Time: URS Date/Time: Relinquished by: Received by: Company: Company: Relinquished by: Date/Time: Received by Company:
TA Sa Company:

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# Login Sample Receipt Checklist

Client: Solutia Inc.

Job Number: 680-98461-1

SDG Number: KPS108

List Source: TestAmerica Savannah

Login Number: 98461 List Number: 1

Creator: Conner, Keaton

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>N/A</td> <td></td>	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	,
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

TestAmerica Savannah

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# **Certification Summary**

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98461-1

SDG: KPS108

#### Laboratory: TestAmerica Savannah

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
	AFCEE		SAVLAB	
A2LA	DoD ELAP		399.01	02-28-15
A2LA	ISO/IEC 17025		399.01	02-28-15
Alabama	State Program	4	41450	06-30-14
Arkansas DEQ	State Program	6	88-0692	01-31-15
California	NELAP	9	3217CA	07-31-14
Colorado	State Program	8	N/A	12-31-14
Connecticut	State Program	1	PH-0161	03-31-15
Florida	NELAP	4	E87052	06-30-14
GA Dept. of Agriculture	State Program	4	N/A	06-30-14
Georgia	State Program	4	N/A	06-30-14
Georgia	State Program	4	803	06-30-14
Guam	State Program	9	09-005r	04-17-14
Hawaii	State Program	9	N/A	06-30-14
Illinois	NELAP	5	200022	11-30-14
indiana	State Program	5	N/A	06-30-14
lowa	State Program	7	353	07-01-15
Kentucky (DW)	State Program	4	90084	12-31-14
Kentucky (UST)	State Program	4	18	06-30-14
_ouisiana	NELAP	6	LA100015	12-31-14
Maine	State Program	1	GA00006	08-16-14
Maryland	State Program	3	250	12-31-14
Massachusetts `	State Program '	1	M-GA006	06-30-14 `
Michigan	State Program	5	9925	06-30-14
Mississippi	State Program	4	N/A	06-30-14
Montana	State Program	8	CERT0081	01-01-15
Nebraska	State Program	7	TestAmerica-Savannah	06-30-14
New Jersey	NELAP	. 2	GA769	06-30-14
New Mexico	State Program	6	N/A	06-30-14
New York	NELAP	2	10842	03-31-14
North Carolina DENR	State Program	4	269	12-31-14
North Carolina DHHS	State Program	4	13701	07-31-14
Oklahoma	State Program	6	9984	08-31-14
Pennsylvania	NELAP	3	68-00474	06-30-14
Риело Rico	State Program	2	GA00006	01-01-14 *
South Carolina	State Program	4	98001	06-30-14
Tennessee	State Program	. 4	TN02961	06-30-14
Texas	NELAP	. 6	T104704185-08-TX	11-30-14
JSDA	Federal		SAV 3-04	04-07-14
/irginia	NELAP	3	460161	06-14-14
Washington	State Program	10	C1794	06-10-14
West Virginia DEP	State Program	3	94	06-30-14
West Virginia DHHR	State Program	3	9950C	12-31-13 *
Wisconsin	State Program	5	999819810	08-31-14
Wyoming	State Program	8	8TMS-L	06-30-14

<sup>\*</sup> Expired certification is currently pending renewal and is considered valid.

# Solutia Krummrich Data Review WGK LTM 1Q14

**Laboratory SDG: KPS109** 

Data Reviewer: Melissa Mansker Peer Reviewer: Elizabeth Kunkel

Date Reviewed: 3/7/2014

Guidance: USEPA National Functional Guidelines for Superfund Organic Methods Data Review 2008. USEPA National Functional Guidelines for Superfund

**Inorganic Data Review 2010** 

Work Plan: Revised Long-Term Monitoring Program (LTMP) Work Plan (Solutia

2009)

Sample Identification					
GWE-5S-0214	GWE-5S-F(0.2)-0214				
GWE-5M-0214	GWE-5M-F(0.2)-0214				
GWE-5D-0214	GWE-5D-F(0.2)-0214				
1Q14 LTM Trip Blank #4					

# 1.0 Data Package Completeness

Were all items delivered as specified in the QAPP and COC as appropriate?

#### 2.0 Laboratory Case Narrative \ Cooler Receipt Form

Were problems noted in the laboratory case narrative or cooler receipt form?

Yes, the laboratory case narrative indicated that the LCS recovery was outside evaluation criteria for nitrate. Samples were diluted due to high levels of target analytes. Instrument calibration was outside evaluation criteria for nitrate. These issues are addressed further in the appropriate sections below.

The cooler receipt form indicated a pH > 2 for dissolved organic carbon in sample GWE-5S-F(0.2)-0214; please see section 11.0 of this review for qualifications. The laboratory report was revised and re-issued on March 7, 2014 to include the case narrative which had not been included with the original report.

#### 3.0 Holding Times

Were samples extracted/analyzed within applicable limits?

Yes

#### 4.0 Blank Contamination

Were any analytes detected in the Method Blanks, Field Blanks or Trip Blanks?

Nο

# 5.0 Laboratory Control Sample

Were LCS recoveries within evaluation criteria?

No

LCS/LCSD ID	Parameter	Analyte	LCS/LCSD Recovery	RPD	LCS/LCSD/ RPD Criteria
LCS 680-315170/14	General chemistry	Nitrate	111	NA	90-110

Analytical data that required qualification based on LCS data are included in the table below. Analytical data reported as non-detect and associated with LCS recoveries above evaluation criteria, indicating a possible high bias, did not require qualification.

Sample ID	Parameter	Analyte	Qualification
GWE-5S-0214	General chemistry	Nitrate	7

#### 6.0 Surrogate Recoveries

Were surrogate recoveries within evaluation criteria?

Yes

#### 7.0 Matrix Spike and Matrix Spike Duplicate Recoveries

Were MS/MSD samples collected as part of this SDG?

Yes, although not requested, sample GWE-5S-0214 was spiked and analyzed for total metals, chloride, and sulfate, and sample GWE-5S-F(0.2)-0214 was spiked and analyzed for dissolved organic carbon.

Were MS/MSD recoveries within evaluation criteria?

Yes

#### 8.0 Internal Standard (IS) Recoveries

Were internal standard area recoveries within evaluation criteria?

Yes

# 9.0 Laboratory Duplicate Results

Were laboratory duplicate samples collected as part of this SDG?

Yes, sample GWE-5M-0214 was duplicated and analyzed for chloride and sulfate. Sample GWE-5D-F(0.2)-0214 was duplicated and analyzed for dissolved organic carbon.

Were laboratory duplicate sample RPDs within criteria?

Yes

#### 10.0 Field Duplicate Results

Were field duplicate samples collected as part of this SDG?

No

#### 10.0 Sample Dilutions

For samples that were diluted and nondetect, were undiluted results also reported? Not applicable; analytes were detected in samples that were diluted.

#### 11.0 Additional Qualifications

Were additional qualifications applied?

Yes, the following samples are qualified, as summarized below, due to pH > 2.

Sample ID	Parameter	Analyte	Qualification
GWE-5S-F(0.2)-0214	General chemistry	Dissolved organic carbon	J

Additionally, the following sample is qualified, as summarized below, due to instrument calibration outside evaluation criteria for nitrate. Nitrate in sample GWE-5S-0214 was previously qualified in Section 5.0 of this data review due to LCS recovery data; no further qualification of sample GWE-5S-0214 was required.

Sample ID	Parameter	Analyte	Qualification
GWE-5M-0214	General chemistry	Nitrate	UJ
GWE-5D-0214	General chemistry	Nitrate	UJ

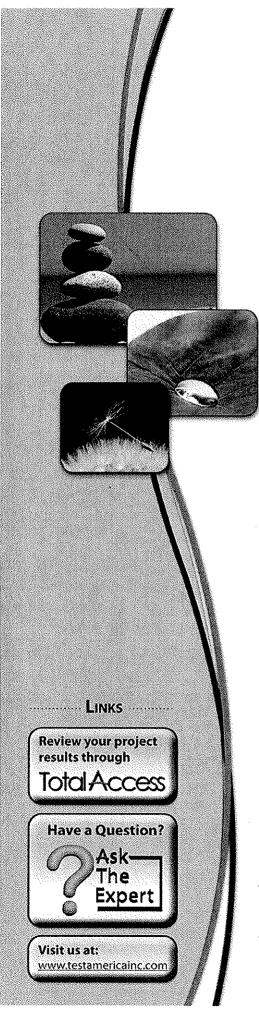
# **SDG KPS109**

Results of Samples from Monitoring Well:

**GWE-5S** 

**GWE-5M** 

**GWE-5D** 



# <u>TestAmerica</u>

THE LEADER IN ENVIRONMENTAL TESTING

# **ANALYTICAL REPORT**

TestAmerica Laboratories, Inc. TestAmerica Savannah 5102 LaRoche Avenue Savannah, GA 31404 Tel: (912)354-7858

TestAmerica Job ID: 680-98489-1

TestAmerica Sample Delivery Group: KPS109

Client Project/Site: WGK Long Term Monitoring - 1Q14

Revision: 1

For:

Solutia Inc.

575 Maryville Centre Dr. Saint Louis, Missouri 63141

Attn: Mr. Jerry Rinaldi

Michele RKusey

Authorized for release by: 3/7/2014 3:25:20 PM

Michele Kersey, Project Manager I (912)354-7858 michele.kersey@testamericainc.com

Reviewed on MAR 07 2014 MM

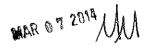
The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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#### **Case Narrative**

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98489-1

SDG: KPS109

Job ID: 680-98489-1

Laboratory: TestAmerica Savannah

Narrative

#### **CASE NARRATIVE**

Client: Solutia Inc.

Project: WGK Long Term Monitoring - 1Q14

Report Number: 680-98489-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In the event of interference or analytes present at high concentrations, samples may be diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

#### RECEIPT

The samples were received on 2/11/2014 10:08 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.2° C.

Except:

Method(s) 415.1, SM 5310B: The following sample(s) were collected in properly preserved vials for analysis of total organic compounds (TOCs). However, the pH was outside the required criteria when verified by the laboratory, and corrective action was not possible: GWE-5S-F(0.2)-0214 (680-98489-2).

#### **VOLATILE ORGANIC COMPOUNDS (GC-MS)**

Samples GWE-5S-0214 (680-98489-1), GWE-5M-0214 (680-98489-3), GWE-5D-0214 (680-98489-5) and 1Q14 LTM Trip Blank #4 (680-98489-7) were analyzed for Volatile Organic Compounds (GC-MS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 02/20/2014 and 02/21/2014.

Sample GWE-5D-0214 (680-98489-5)[2X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No difficulties were encountered during the volatiles analysis.

All quality control parameters were within the acceptance limits.

#### **DISSOLVED GASES**

Samples GWE-5S-0214 (680-98489-1), GWE-5M-0214 (680-98489-3) and GWE-5D-0214 (680-98489-5) were analyzed for dissolved gases in accordance with RSK-175. The samples were analyzed on 02/14/2014.

No difficulties were encountered during the dissolved gases analysis.

All quality control parameters were within the acceptance limits.

#### METALS (ICP)

Samples GWE-5S-F(0.2)-0214 (680-98489-2), GWE-5M-F(0.2)-0214 (680-98489-4) and GWE-5D-F(0.2)-0214 (680-98489-6) were analyzed for Metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared and analyzed on 02/12/2014.

No difficulties were encountered during the metals analysis.

All quality control parameters were within the acceptance limits.

MAR 07 2014

#### **Case Narrative**

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98489-1 SDG: KPS109

# KP3109

Job ID: 680-98489-1 (Continued)

Laboratory: TestAmerica Savannah (Continued)

#### METALS (ICP)

Samples GWE-5S-0214 (680-98489-1), GWE-5M-0214 (680-98489-3) and GWE-5D-0214 (680-98489-5) were analyzed for Metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared and analyzed on 02/12/2014.

No difficulties were encountered during the metals analysis.

All quality control parameters were within the acceptance limits.

#### **ALKALINITY**

Samples GWE-5S-0214 (680-98489-1), GWE-5M-0214 (680-98489-3) and GWE-5D-0214 (680-98489-5) were analyzed for alkalinity in accordance with EPA Method 310.1. The samples were analyzed on 02/13/2014.

No difficulties were encountered during the alkalinity analysis.

All quality control parameters were within the acceptance limits.

#### **CHLORIDE**

Samples GWE-5S-0214 (680-98489-1), GWE-5M-0214 (680-98489-3) and GWE-5D-0214 (680-98489-5) were analyzed for Chloride in accordance with EPA Method 325.2. The samples were analyzed on 02/18/2014.

Sample GWE-5D-0214 (680-98489-5)[2X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No difficulties were encountered during the chloride analysis.

All quality control parameters were within the acceptance limits.

#### **NITRATE-NITRITE AS NITROGEN**

Samples GWE-5S-0214 (680-98489-1), GWE-5M-0214 (680-98489-3) and GWE-5D-0214 (680-98489-5) were analyzed for nitrate-nitrite as nitrogen in accordance with EPA Method 353.2. The samples were analyzed on 02/11/2014.

The nitrate result is obtained from a calculation incorporating the nitrite and nitrate + nitrite results. Re-analysis is not performed if QC for the calculated analyte does not meet acceptance criteria, provided the QC results for the component analytes are acceptable. Data have been qualified to denote this situation.

No difficulties were encountered during the nitrate-nitrite analysis.

All quality control parameters were within the acceptance limits.

#### SULFATE

Samples GWE-5S-0214 (680-98489-1), GWE-5M-0214 (680-98489-3) and GWE-5D-0214 (680-98489-5) were analyzed for sulfate in accordance with EPA Method 375.4. The samples were analyzed on 02/18/2014.

Samples GWE-5S-0214 (680-98489-1)[5X], GWE-5M-0214 (680-98489-3)[5X] and GWE-5D-0214 (680-98489-5)[10X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No difficulties were encountered during the sulfate analysis.

All quality control parameters were within the acceptance limits.

#### TOTAL ORGANIC CARBON

Samples GWE-5S-0214 (680-98489-1), GWE-5M-0214 (680-98489-3) and GWE-5D-0214 (680-98489-5) were analyzed for total organic carbon in accordance with EPA Method 415.1. The samples were analyzed on 02/13/2014.

No difficulties were encountered during the TOC analysis.

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# **Case Narrative**

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98489-1

SDG: KPS109

Job ID: 680-98489-1 (Continued)

Laboratory: TestAmerica Savannah (Continued)

All quality control parameters were within the acceptance limits.

**DISSOLVED ORGANIC CARBON (DOC)** 

Samples GWE-5S-F(0.2)-0214 (680-98489-2), GWE-5M-F(0.2)-0214 (680-98489-4) and GWE-5D-F(0.2)-0214 (680-98489-6) were analyzed for Dissolved Organic Carbon (DOC) in accordance with EPA Method 415.1. The samples were analyzed on 02/13/2014.

No difficulties were encountered during the DOC analysis.

All quality control parameters were within the acceptance limits.

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TestAmerica Savannah

Page 5 of 34

# **Sample Summary**

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98489-1

SDG: KPS109

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-98489-1	GWE-5S-0214	Water	02/10/14 12:35	02/11/14 10:08
680-98489-2	GWE-5S-F(0.2)-0214	Water	02/10/14 12:35	02/11/14 10:08
680-98489-3	GWE-5M-0214 🖋 🦯	Water	02/10/14 14:25	02/11/14 10:08
680-98489-4	GWE-5M-F(0.2)-0214	Water	02/10/14 14:25	02/11/14 10:08
680-98489-5	GWE-5D-0214 V	Water	02/10/14 15:55	02/11/14 10:08
680-98489-6	GWE-5D-F(0.2)-0214	Water	02/10/14 15:55	02/11/14 10:08
680-98489-7	1Q14 LTM Trip Blank #4 🗸	Water	02/10/14 00:00	02/11/14 10:08

MY 2012 M

# **Method Summary**

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98489-1

SDG: KP\$109

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL SAV
RSK-175	Dissolved Gases (GC)	RSK	TAL SAV
6010C	Metals (ICP)	SW846	TAL SAV
310.1	Alkalinity	MCAWW	TAL SAV
325.2	Chloride	MCAWW	TAL SAV
353.2	Nitrogen, Nitrate-Nitrite	MCAWW	TAL SAV
375.4	Sulfate	MCAWW	TAL SAV
415.1	TOC	MCAWW	TAL SAV
415.1	DOC	MCAWW	TAL \$AV

#### Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

RSK = Sample Prep And Calculations For Dissolved Gas Analysis In Water Samples Using A GC Headspace Equilibration Technique, RSKSOP-175, Rev. 0, 8/11/94, USEPA Research Lab

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

#### Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

MAR 07 2014

# **Definitions/Glossary**

Client: Solutia Inc. TestAmerica Job ID: 680-98489-1 Project/Site: WGK Long Term Monitoring - 1Q14 SDG: KPS109 Qualifiers GC/MS VOA Qualifier Qualifier Description Ū Indicates the analyte was analyzed for but not detected. GC VOA Qualifier Qualifier Description Indicates the analyte was analyzed for but not detected. Metals Qualifier Qualifier Description Indicates the analyte was analyzed for but not detected. **General Chemistry** Qualifier Qualifier Description LCS or LCSD exceeds the control limits ŧī Indicates the analyte was analyzed for but not detected. ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC exceeds the control limits. Glossary Abbreviation These commonly used abbreviations may or may not be present in this report. Listed under the "D" column to designate that the result is reported on a dry weight basis %R Percent Recovery CNF Contains no Free Liquid DER Duplicate error ratio (normalized absolute difference) Dif Fac Dilution Factor DL, RA, RE, IN Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample DLC Decision level concentration MDA Minimum detectable activity EDL Estimated Detection Limit MDC Minimum detectable concentration MDL, Method Detection Limit ML Minimum Level (Dioxin) NC Not Calculated NO Not detected at the reporting limit (or MDL or EDL if shown) PQL Practical Quantitation Limit

Quality Control

Relative error ratio

Toxicity Equivalent Factor (Dioxin)

Toxicity Equivalent Quotient (Dioxin)

Reporting Limit or Requested Limit (Radiochemistry)

Relative Percent Difference, a measure of the relative difference between two points

RER

RPD

TEF

TEQ

RI.

# **Detection Summary**

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

Client Sample ID: GWE-5S-0214

TestAmerica Job ID: 680-98489-1

Lab Sample ID: 680-98489-1

SDG: KPS109

*		D14	A116	DI	MDI	41-24	Dil Fac	_	Method	Dana Tura
- 6	Analyte	Result	Qualifier	RL	MDL	Unit	Dirac	D	Metitod	Prep Type
of the Paris	Methane	0.92		0.58		ug/L	1		RSK-175	Total/NA
and the same	Iron	0.062		0,050		mg/L	1		6010C	Total
										Recoverable
A contract	Manganese	0.18		0.010		mg/L	1		6010C	Total

Methane	0.92		Q.58		ag/L	1		RSK-175	I Otal/INA
Iron	0.062		0,050		mg/L	1		6010C	Total
									Recoverable
Manganese	0.18		0.010		mg/L	1		6010C	Total
									Recoverable
Chloride	20		1.0		mg/L	1		325.2	Total/NA
Nitrate as N	0.28	· J	0.050		mg/L	1		353.2	Total/NA
Sulfate	74		25		mg/L	5		375.4	Total/NA
Total Organic Carbon	2.4		1.0		mg/L	1		415.1	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Alkalinity	470		5.0		mg/L	1		310.1	Total/NA
Carbon Dioxide, Free	52		5.0		mg/L	1		310.1	Total/NA

Client Sample ID: GWE-5S-F(0	.,	Li	ab	Sample ID	: 68	80-98489-2					
Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method		Ргер Туре	
Manganese, Dissolved	0.18		0.010		mg/L	1	_	6010C		Dissolved	
Discolved Organic Carbon	2.5	7	1.0		moll	1		415.1		Discolved	

Manganese, Dissolved	0.18	0.010	mg/L	1	6010C	Dissolved
Dissolved Organic Carbon	2.5 J	1.0	mg/L	1	415.1	Dissolved
Client Sample ID: GWE-5M	i-0214			La	b Sample ID	): 680-98489-3
Analyte	Result Qualifier	RL	MDL Unit	Dil Fac	D Method	Ргер Туре
Methane	35	0.58	ug/L	1	RSK-175	Total/NA
2	•				<b>-</b>	

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Methane	35		0.58	,,,	ug/L	1		RSK-175	Total/NA
Iron	24	•	0.050		mg/L	1		6010C	Total
Manganese	1.3		0.010		mg/L	1		6010C	Recoverable Total Recoverable
Chloride	47		1.0		mg/L	1		325.2	Total/NA
Sulfate	130		25		mg/L	5		375.4	Total/NA
Total Organic Carbon	2.2		1.0		mg/L	1		415.1	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Alkalinity	480		5.0		mg/L	1		310.1	Total/NA
Carbon Dioxide, Free	38		5.0		mg/L	1		310.1	Total/NA

Client Sample ID: GWE-5M-F	(0.2)-0214		Lab Sample ID: 680-984					
Апаlyte	Result Qualifier	RL	MDL Unit	Dil Fac	D Method	Prep Type		
fron, Dissolved	24	0.050	mg/L	1	6010C	Dissolved		
Manganese, Dissolved	1.3	0.010	mg/L	1	6010C	Dissolved		
Dissolved Organic Carbon	2.2	1.0	mg/L	1	415.1	Dissolved		

Client Sample ID: GWE-5	D-0214		Lab Sample ID: 680-984				
Analyte	Result Qualifier	RL	MDL Unit	Dil Fac D	Method	Prep Type	
Benzene	2.7	2.0	ug/L	2	8260B	Total/NA	
Chlorobenzene	73	2.0	ug/L	2	8260B	Total/NA	
1,2-Dichlorobenzene	2.2	2.0	ug/L	2	8260B	Total/NA	
1,4-Dichlorobenzene	8.6	2.0	ug/L	2	8260B	Total/NA	
Methane	53	0.58	ug/L	1	RSK-175	Total/NA	
Iron	13	0.050	mg/L	1	6010C	Total Recoverable	

This Detection Summary does not include radiochemical test results.

TestAmerica Savannah

MAR 07 2014

# **Detection Summary**

Client: Solutia Inc.

Carbon Dioxide, Free

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98489-1

Lab Sample ID: 680-98489-5

Lab Sample ID: 680-98489-7

310.1

SDG: KPS109

Total/NA

# Client Sample ID: GWE-5D-0214 (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	Đ	Method	Prep Type
Manganese	0.39		0.010		mg/L	1		6010C	Totai
Chloride	90		2.0		mg/L	2		325,2	Recoverable Total/NA
Sulfate	330		50		mg/L	10		375.4	Total/NA
Total Organic Carbon	2.7		1.0		mg/L	1		415.1	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Alkalinity	350		5.0		mg/L	1		310.1	Total/NA

5.0

mg/L

# Client Sample ID: GWF-5D-F(0.2)-0214

Client Sample ID: GWE-5D-F(0		580-98489-6							
Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	Ð	Method	Prep Type
Iron, Dissolved	13		0.050		mg/L	1		6010C	Dissolved
Manganese, Dissolved	0.40		0.010		mg/L	1		6010C	Dissolved
Dissolved Organic Carbon	2.5		1.0		mg/L	1		415.1	Dissolved

# Client Sample ID: 1Q14 LTM Trip Blank #4

No Detections.

This Detection Summary does not include radiochemical test results.

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98489-1

Lab Sample ID: 680-98489-1

SDG: KPS109

Client Sample ID: GWE-5S-0214

Date Collected: 02/10/14 12:35 Date Received: 02/11/14 10:08

12:35

Matrix: Water

Method: 8260B - Volatile Organic (	Compounds (	GC/MS)							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0		ug/L			02/21/14 16:00	1
Chlorobenzene	1.0	U	1.0		ug/L			02/21/14 16:00	1
1,2-Dichlorobenzene	1.0	U	1,0		ug/L			02/21/14 16:00	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			02/21/14 16:00	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			02/21/14 16:00	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	95		70 - 130				Facility of the second second second	02/21/14 16:00	1
Dibromofluoro <b>m</b> ethane	97		70 - 130					02/21/14 16:00	1
Toluene-d8 (Surr)	89		70 - 130					02/21/14 16:00	1
Method: RSK-175 - Dissolved Gas	es (GC)								
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	1.1	U	1.1		ug/L			02/14/14 11:08	1
Ethylene	1.0	U	1.0		ug/L			02/14/14 11:08	1
Methane	0.92		0.58		ug/L			02/14/14 11:08	1
Method: 6010C - Metals (ICP) - Tot	al Recoverat	ile							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.062		0.050		mg/L		02/12/14 08:27	02/12/14 22:15	1
Manganese	0.18	•	0.010		mg/L		02/12/14 08:27	02/12/14 22:15	1
General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	a	Prepared	Analyzed	Dil Fac
Chloride	20		1.0		mg/L			02/18/14 12:11	1
Nítrate as N	0.28	* J	0.050		mg/L			02/11/14 19:31	1
Sulfate	74	~	25		mg/L			02/18/14 18:05	5
Total Organic Carbon	2.4		1.0		mg/L			02/13/14 03:07	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	470		5,0		mg/L			02/13/14 21:02	1
Carbon Dioxide, Free	52		5.0		mg/L			02/13/14 21:02	1

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98489-1

SDG: KPS109

Client Sample ID: GWE-5S-F(0.2)-0214

Date Collected: 02/10/14 12:35 Date Received: 02/11/14 10:08 Lab Sample ID: 680-98489-2

Matrix: Water

Method: 6010C - Metals (ICP) - Dissolved											
Analyte	Result	Qualifier	RL	MDL	Unit		D	Prepared	Analyzed	Dil Fac	
Iron, Dissolved	0.050	Ü	0.050		mg/L			02/12/14 08:27	02/12/14 22:47	1	
Manganese, Dissolved	0.18		0,010		mg/L			02/12/14 08:27	02/12/14 22:47	1	

General Chemistry - Dissolved

Analyte Result Qualifier RL MDL Unit D Prepared Analyzed Dil Fac
Dissolved Organic Carbon 2.5 1.0 mg/L 02/13/14 09:38 1

8

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98489-1

SDG: KPS109

Client Sample ID: GWE-5M-0214

Date Collected: 02/10/14 14:25 Date Received: 02/11/14 10:08 Lab Sample ID: 680-98489-3

Matrix: Water

Method: 8260B - Volatile Or Analyte	•	(GC/MS) Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1,0		1,0		ug/L			02/21/14 16:29	1
Chlorobenzene	1,0	U	1.0		ug/L			02/21/14 16:29	1
1,2-Dichlorobenzene	1,0	U	1.0		ug/L			02/21/14 16:29	1
1,3-Dichlorobenzene	1.0	Ü	1.0		ug/L			02/21/14 16:29	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L	•		02/21/14 16:29	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	95		70 - 130					02/21/14 16:29	1
Dibromofluoromethane	98		70 - 130					02/21/14 16:29	1
Toluene-d8 (Surr)	90		70 - 130					02/21/14 16:29	1
Method: RSK-175 - Dissolve	ed Gases (GC)								
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	1.1	U	1.1		ug/L			02/14/14 11:21	1
Ethylene	1.0	U	1.0		ug/L			02/14/14 11:21	1
Methane	35		0.58		ug/L			02/14/14 11:21	1
Method: 6010C - Metais (ICI	P) - Total Recoverat	ole							
Analyte	Result	Qualifier	RL	MDL	Unit	Đ	Prepared	Analyzed	Dil Fac
Iron	24		0.050		mg/L		02/12/14 08:27	02/12/14 22:52	1
Manganese .	1.3		0.010	•	mg/L		02/12/14 08:27	02/12/14 22:52	1
General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	47		1.0		mg/L			02/18/14 12:11	1
Nitrate as N	0.050	U. NJ	0.050		mg/L			02/11/14 19:32	1
Sulfate	130		25		mg/L			02/18/14 17:21	5
Total Organic Carbon	2.2		1.0		mg/L			02/13/14 03:25	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	480	***************************************	5.0	**	mg/L			02/13/14 20:45	1

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98489-1

SDG: KPS109

Client Sample ID: GWE-5M-F(0.2)-0214

Date Collected: 02/10/14 14:25 Date Received: 02/11/14 10:08 Lab Sample ID: 680-98489-4

Matrix: Water

Method: 6010C - Metals (ICP) - D	issolved								
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	24		0.050	bester a contract of the same between the same of the	mg/L		02/12/14 08:27	02/12/14 22:56	1
Manganese, Dissolved	1.3		0.010		mg/L		02/12/14 08:27	02/12/14 22:56	1
General Chemistry - Dissolved									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	2.2		1.0		mg/L			02/13/14 10:18	1

8

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98489-1

SDG: KPS109

Client Sample ID: GWE-5D-0214

Lab Sample ID: 680-98489-5 Date Collected: 02/10/14 15:55

Matrix: Water

Method: 8260B - Volatile Org									
Analyte	Result	Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fac
Benzene	2.7		2.0		ug/L			02/20/14 18:33	2
Chlorobenzene	73		2.0		ug/L			02/20/14 18:33	2
1,2-Dichlorobenzene	2.2		2,0		ug/L	,		02/20/14 18:33	2
1,3-Dichlorobenzene	2.0	U	2.0		ug/L			02/20/14 18:33	2
1,4-Dichlorobenzene	8.5		2.0		ug/L			02/20/14 18:33	2
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	96	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	70 - 130					02/20/14 18:33	2
Dibromofluoromethane	90		70 - 130					02/20/14 18:33	2
Toluene-d8 (Surr)	94		70 - 130					02/20/14 18:33	2
Method: RSK-175 - Dissolve	d Gases (GC)								
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	1.1	U	1.1		ug/L			02/14/14 11:34	1
Ethylene	1.0	U	1.0		ug/L			02/14/14 11:34	1
Methane	53		0.58		ug/L			02/14/14 11:34	•
Method: 6010C - Metals (ICP	) - Total Recoverat	ole							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
iron	13		0.050		mg/L		02/12/14 08:27	02/12/14 23:01	•
Manganese	0.39		0.010 ,		mg/L		02/12/14 08:27	02/12/14 23:01	
General Chemistry									
Апајује	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Chloride	90		2.0		mg/L			02/18/14 12:31	
Nitrate as N	0.050	n. NI	0.050		mg/L			02/11/14 19:33	1
Sulfate	330		50		mg/L			02/18/14 17:35	10
Total Organic Carbon	2.7		1.0		mg/L			02/13/14 03:44	•
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	350		5.0		mg/L		***************************************	02/13/14 20:53	
Carbon Dioxide, Free	24		5.0		mg/L			02/13/14 20:53	•

TestAmerica Savannah

MAR 0 7 2014

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98489-1

SDG: KPS109

Client Sample ID: GWE-5D-F(0.2)-0214

Date Collected: 02/10/14 15:55 Date Received: 02/11/14 10:08

Dissolved Organic Carbon

Lab Sample ID: 680-98489-6

02/13/14 11:02

Matrix: Water

	Method: 6010C - Metals (ICP) - Disso	lved								
	Analyte	Result	Qualifier	RL	MDL	Unit	ď	Prepared	Analyzed	Dil Fac
	Iron, Dissolved	13		0.050	LALL-M.AA	mg/L		02/12/14 08:27	02/12/14 23:06	1
2000 0000	Manganese, Dissolved	0.40		0.010		mg/L		02/12/14 08:27	02/12/14 23:06	1
	General Chemistry - Dissolved	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac

1.0

mg/L

2.5

:

Ö

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98489-1

SDG: KPS109

Client Sample ID: 1Q14 LTM Trip Blank #4

Date Collected: 02/10/14 00:00 Date Received; 02/11/14 10:08

Lab Sample ID: 680-98489-7

Matrix: Water

Analyte	Result	Qualifier	RL	MOL	Unit	ם	Prepared	Analyzed	Dil Fac
Benzene	1.0	υ	1.0		ug/L			02/21/14 14:19	1
Chlorobenzene	1.0	U	1.0		ug/L			02/21/14 14:19	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			02/21/14 14:19	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			02/21/14 14:19	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			02/21/14 14:19	1

Surrogate	%Recovery		Limits	Prepared	Analyzed	Díl Fac	
4-Bromofluorobenzene	96	***************************************	70 - 130	······································	02/21/14 14:19	1	
Dibromofluoromethane	96		70 - 130		02/21/14 14:19	1	
Toluene-d8 (Surr)	97		70 - 130		02/21/14 14:19	1	

# **Surrogate Summary**

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98489-1

SDG: KPS109

# Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water Prep Type: Total/NA

				Percent Sur
		BFB	DBFM	TOL
ab Sample ID	Client Sample ID	(70-130)	(70-130)	(70-130)
80-98489-1	GWE-5S-0214	95	97	89
680-98489-3	GWE-5M-0214	95	98	90
680-98489-5	GWE-5D-0214	96	90	94
80-98489-7	1Q14 LTM Trip Blank #4	96	96	97
CS 680-316403/4	Lab Control Sample	97	91	97
CS 680-316608/5	Lab Control Sample	112	92	108
CS 680-316609/4	Lab Control Sample	101	90	94
CSD 680-316403/5	Lab Control Sample Dup	99	93	101
CSD 680-316608/9	Lab Control Sample Dup	99	89	101
CSD 680-316609/5	Lab Control Sample Dup	107	90	101
MB 680-316403/8	Method Blank	94	100	88
MB 680-316608/7	Method Blank	98	97	97
MB 680-316609/8	Method Blank	97	97	89

BFB = 4-Bromofluorobenzene

DBFM = Dibromofluoromethane

TOL = Toluene-d8 (Surr)

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98489-1

SDG: KPS109

# Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 680-316403/8 Client Sample ID: Method Blank Matrix: Water Prep Type: Total/NA

Analysis Batch: 316403

	WB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	Ō	Prepared	Analyzed	Díl Fac
Benzene	1.0	Ū	1.0		ug/L			02/20/14 12:52	1
Chlorobenzene	1.0	U	1.0		ug/L			02/20/14 12:52	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			02/20/14 12:52	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			02/20/14 12:52	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			02/20/14 12:52	1
	MB	MB							
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	94	****************	70 - 130			-		02/20/14 12:52	1
Dibromofluoromethane	100		70 - 130					02/20/14 12:52	1
Toluene-d8 (Suπ)	88		70 - 130					02/20/14 12:52	1

Client Sample ID: Lab Control Sample Lab Sample ID: LCS 680-316403/4 Matrix: Water Prep Type: Total/NA

Analysis Batch: 316403

		Spike	LCS	LCS				%Rec.		
-	Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits		
	Benzene	50.0	51.8	,	ug/L	****	104	74 - 123	************	*
	Chlorobenzene	50.0	46.7		ug/L		93	79 - 120		
	1,2-Dichlorobenzene	50.0	46.3		ug/L ·		93	77 - 124		
	1,3-Dichlorobenzene	50.0	47.4		ug/L		95	79 - 123		
	1,4-Dichlorobenzene	50,0	46.5		ug/L		93	76 - 124		

LCS LCS Surrogate %Recovery Qualifier Limits 4-Bromofluorobenzene 97 70.130 Dibromofluoromethane 70 - 130 91 Toluene-d8 (Surr) 70 - 130 97

Lab Sample ID: LCSD 680-316403/5

Matrix: Water

-	Analysis Batch: 316403									
1		Spike	LCSD	LC\$D			%Rec.		RPD	
	Analyte	Added	Result	Qualifier Unit	D	%Rec	Limits	RPD	Limit	
-	Benzene	50.0	53.6	ug/L		107	74 - 123	3	30	
-	Chlorobenzene	50.0	47.9	ug/L		96	79 - 120	2	30	
	1,2-Dichlorobenzene	50,0	46.9	ug/L		94	77 - 124	1	30	
	1,3-Dichlorobenzene	50.0	48.2	ug/L		96	79 - 123	2	30	
	1,4-Dichlorobenzene	50.0	47.4	ug/L		95	76 - 124	2	30	

	LC\$D	LCSD	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene	99	200002100011100111	70.130
Dibromofluoromethane	93		70 - 130
Toluene-d8 (Surr)	101		70 - 130

TestAmerica Savannah

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

MAR 0 7 2014

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98489-1

Client Sample ID: Lab Control Sample

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Type: Total/NA

SDG: KPS109

# Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 680-316608/7

Matrix: Water

Client Sample ID: Method Blank

Prep Type: Total/NA

alusie Botoh, 246600

Analysis Batch: 316608

	MB	MB							
Analyte	Result	Qualifier	RL	MDL 4	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0		ug/L			02/21/14 11:55	1
Chiorobenzene	1.0	U	1.0		ug/L			02/21/14 11:55	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			02/21/14 11:55	1
1,3-Dichlorobenzene	1.0	U	1.0	1	ug/L			02/21/14 11:55	1
1,4-Dichtorobenzene	1.0	U	1.0	ı	ug/L			02/21/14 11:55	1
	MB	MB							
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4. Promofluorobenzene	00		70 120			-		02/21/14 11:55	1

4-Bromofluorobenzene 98 70 - 130 02/21/14 11:55 1
Dibromofluoromethane 97 70 - 130 02/21/14 11:55 1
Toluene-d8 (Surr) 97 70 - 130 02/21/14 11:55 1

Lab Sample ID: LCS 680-316608/5

Matrix: Water

Analysis Batch: 316608

	Spike	LCS	LCS			%Rec.		
Analyte	Added	Result	Qualifier Unit	D	%Rec	Limits		
Benzene	50.0	53.3	ug/L		107	74 - 123	manus market	
Chlorobenzene	50,0	51.2	ug/L		102	79 - 120		
1,2-Dichlorobenzene	. 50.0	55.5	ug/L		111	77 - 124		
1,3-Dichlorobenzene	50.0	56.6	ug/L		113	79 - 123		
1,4-Dichlorobenzene	50.0	54.1	ug/L		108	76 - 124		

 Surrogate
 %Recovery
 Qualifier
 Limits

 4-Bromofluorobenzene
 112
 70 - 130

 Dibromofluoromethane
 92
 70 - 130

 Toluene-d8 (Surr)
 108
 70 - 130

Lab Sample ID: LCSD 680-316608/9

Matrix: Water

Analysis Batch: 316608

-	Allalysis Balcii. 310000										
		Spike	LCSD	LCSD				%Rec.		RPD	
	Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
	Benzene	50.0	50,9		ug/L		102	74 - 123	5	30	
	Chlorobenzene	50,0	46.4		ug/L		93	79 - 120	10	30	
	1,2-Dichlorobenzene	50.0	48.3		ug/L		97	77 - 124	14	30	
	1,3-Dichlorobenzene	50.0	49.2		ug/L		98	79 - 123	14	30	
	1,4-Dichlorobenzene	50.0	48.2		ug/L		96	76 - 124	12	30	

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene	99	hammed or ham de his had been her of a control	70.130
Dibromofluoromethane	89		70 - 130
Toluene-d8 (Surr)	101		70 - 130

TestAmerica Savannah

MAR 0 7 2014 MM

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98489-1

Client Sample ID: Method Blank

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

SDG: KPS109

# Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 680-316609/8

Matrix: Water

Analysis Batch: 316609

	MB	MB								
Analyte	Result	Qualifier	RL	MDL	Unit	ſ	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0		ug/L				02/21/14 12:38	1
Chlorobenzene	1.0	U	1.0		ug/L				02/21/14 12:38	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L				02/21/14 12:38	1
1,3-Dichtorobenzene	1.0	U	1.0		ug/L				02/21/14 12:38	1
1,4-Dichlorobenzene	1.0	ប	1.0		ug/L				02/21/14 12:38	1
	MD	MB								

	MB	MB					0.000
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac	8
4-Bromofluorobenzene	97		70 - 130		02/21/14 12:38	1	SERVICE
Dibromofluoromethane	97		70 - 130		02/21/14 12:38	1	22033
Toluene-d8 (Surr)	89		70 - 130		02/21/14 12:38	1	1

Lab Sample ID: LCS 680-316609/4

Ма

An

latrix: Water			Prep Type: Total/NA
nalysis Batch: 316609			
	Spike	LCS LCS	%Rec.

	Spike	1.00	200			/ai (00.		
Analyte	Added	Result	Qualifier Un	it D	%Rec	Limits		
Benzene	50.0	50.0	ug/	L –	100	74 - 123	MANAGEMENT AND	
 Chlorobenzene	50.0	47.6	ug/	'L	95	79 - 120		
1,2-Dichlorobenzene	50.0	48.2	ug/	'L	96	77 - 124		
1,3-Dichforobenzene	50.0	50,6	ugi	'L	101	79 - 123		
1,4-Dichlorobenzene	50.0	48.5	ug/	L	97	76 - 124		

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofiuorobenzene	101		70 - 130
Dibromofluoromethane	90		70 - 130
Toluene-d8 (Surr)	94		70 - 130

Lab Sample ID: LCSD 680-316609/5	Client Sample ID: Lab Control Sample Dup
Matrix: Water	Prep Type: Total/NA
Analysis Ratch: 316609	

-	Spike	LCSD	LC\$D			%Rec.		RPD
Analyte	Added	Result	Qualifier	Unit I	%Rec	Limits	RPD	Limit
Benzene	50.0	52.8		ug/L	106	74 - 123	6 .	30
Chlorobenzene	50.0	48,5		ug/L	97	79 - 120	2	30
1,2-Dichlorobenzene	50.0	50.8		ug/L	102	77 - 124	5	30
1,3-Dichlorobenzene	50.0	52.0		ug/L	104	79 - 123	3	30
1,4-Dichlorobenzene	50.0	50.7		ug/L	101	76 <sub>-</sub> 124	4	30

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene	107		70 . 130
Dibromofluoromethane	90		70 - 130
Toluene-d8 (Surr)	101		70 - 130











Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98489-1

SDG: KPS109

#### Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 680-315596/8

Matrix: Water

Client Sample ID: Method Blank
Prep Type: Total/NA

Analysis Batch: 315596

	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	1.1	υ	1.1		ug/L			02/14/14 09:32	1
Ethylene	1.0	U	1.0		ug/L			02/14/14 09:32	1
Methane	0.58	U	0,58		ug/L			02/14/14 09:32	1
Methane (TCD)	390	U	390		ug/L			02/14/14 D9:32	1

Lab Sample ID: LCS 680-315596/4

Matrix: Water

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analysis Batch: 315596

		Spike	LCS	LCS				%Rec.	
141 101 101	Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
	Ethane	288	294		ug/L		102	75 - 125	
10000000	Ethylene	269	287		ug/L		107	75 - 125	
	Methane	154	149		ug/L		97	75 - 125	

Lab Sample ID: LCS 680-315596/6

Matrix: Water

Analysis Batch: 315596

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Spike LCS LCS %Rec.
Analyte Added Result Qualifier Unit D %Rec. Limits

 Analyte
 Added
 Result Qualifier
 Unit
 D %Rec
 Limits

 Methane (TCD)
 1920
 2070
 ug/L
 108
 75 - 125

Lab Sample ID: LCSD 680-315596/5

Matrix: Water

Analysis Batch: 315596

Spike LCSD LCSD Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

LCSD LCSD WRec. RPD

Analyte Added Result Qualifier Unit %Rec Limits RPD Limit Ethane 288 296 ug/L 103 75 . 125 30 Ethylene 269 289 107 75.125 ug/L 30 Methane 154 149 ug/L 97 75 . 125 30

Lab Sample ID: LCSD 680-315596/7

Matrix: Water

Analysis Batch: 315596

Spike LCSD LCSD Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

AREC. RPD

 Analyte
 Added
 Result Qualifier
 Unit
 D %Rec
 Limits
 RPD
 Limit

 Methane (TCD)
 1920
 2030
 ug/L
 105
 75 - 125
 2
 30

# Method: 6010C - Metals (ICP)

Lab Sample ID: MB 680-315183/1-A
Client Sample ID: Method Blank
Matrix: Water
Analysis Batch: 315428
Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 315183

į		MB	WR							
	Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Iron	0.050	Ū	0,050		mg/L		02/12/14 08:27	02/12/14 22:06	1
	fron, Dissolved	0.050	U	0.050		mg/L		02/12/14 08:27	02/12/14 22:06	1
	Manganese	0.010	U	0.010		mg/L		02/12/14 08:27	02/12/14 22:06	1
	Manganese, Dissolved	0,010	U	0.010		mg/L		02/12/14 08:27	02/12/14 22:06	1

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98489-1

Client Sample ID: Method Blank

SDG: KPS109

# Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LCS 680-315183/2-A	Client Sample ID: Lab Control Samp							
Matrix: Water	atrix: Water							
Analysis Batch: 315428							Prep E	Batch: 315183
	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Iron	5.00	5.10		mg/L		102	75 - 125	
Iron, Dissolved	5.00	5.10		mg/L		102	75 - 125	
Manganese	0.500	0.531		mg/L		106	75 - 125	
Manganese, Dissolved	0.500	0.531		mg/L		106	75 - 125	
\$								

Lab Sample ID: 680-98489-1 MS Client Sample ID: GWE-5S-0214 Prep Type: Total Recoverable Matrix: Water Analysis Batch: 315428 Prep Batch: 315183

Sample Sample Spike MS MS %Rec. Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits tron 0.062 5,00 5.10 mg/L 101 75 - 125 75 - 125 Manganese 0.18 0.500 0.706 mg/L 105

Lab Sample ID: 680-98489-1 MSD Client Sample ID: GWE-5S-0214 Matrix: Water Prep Type: Total Recoverable

Analysis Batch: 315428 Prep Batch: 315183 Sample Sample Spike MSD MSD %Rec. RPD Analyte Result Qualifier Added Result Qualifier Unit %Rec Limits RPD Limit fron 0.062 5.00 5.18 mg/L 102 75 - 125 20 Manganese 0.18 0.500 0.711 mg/L 106 75 - 125 20

# Method: 310.1 - Alkalinity

Alkalinity

Lab Sample ID: MB 680-315783/5

Matrix: Water								Prep Type: `	Total/NA	
Analysis Batch: 315783										
	MB	MB								
Analyte	Result	Qualifier	RL	RL	Unit	a	Prepared	Analyzed	Dil Fac	
Alkalinity	5.0	U	5.0		ma/L			02/13/14 20:09	1	

5.0 U 02/13/14 20:09 Carbon Dioxide, Free 5.0 mg/L

Lab Sample ID: LCS 680-315783/6 Client Sample ID: Lab Control Sample Matrix: Water Prep Type: Total/NA Analysis Batch: 315783

Spike LCS LCS %Rec. Analyte Added Result Qualifier Unit %Rec Limits 254 Alkalinity 250 mg/L 102 80 - 120

250

Lab Sample ID: LCSD 680-315783/30 Client Sample ID: Lab Control Sample Dup Matrix: Water Prep Type: Total/NA Analysis Batch: 315783 LCSD LCSD RPN %Rec. Spike Analyte Added Result Qualifier Unit D %Rec Limits RPD Limit

226

mg/L

91

80 - 120

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12

30

Client: Solutia	i Inc.
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Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98489-1

Client Sample ID: GWE-5S-0214

Prep Type: Total/NA

SDG: KPS109

Method:	325.2	- Chloride	
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Lab Sample ID: MB 680-316242/15 Client Sample ID: Method Blank Matrix: Water Prep Type: Total/NA

Analysis Batch: 316242

i		WR	WR							
i	Analyte	Result	Qualifier	RL	MDL	Unit	Ð	Prepared	Analyzed	Dil Fac
	Chloride	1.0	Ū	1.0	·	mg/L			02/18/14 12:21	1

Client Sample ID: Lab Control Sample Lab Sample ID: LCS 680-316242/1 Prep Type: Total/NA Matrix: Water

Analysis Batch: 316242

Spike LCS LCS %Rec. Analyte Added Result Qualifier Unit %Rec Limits Chloride 25.0 85 - 115 25.8 mg/L

Lab Sample ID: 680-98489-1 MS

Matrix: Water

Analysis Batch: 316242

	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	Ð	%Rec	Limits	
Chloride	20	***************************************	25.0	41.9		ma/L		89	85 - 115	

Client Sample ID: GWE-5S-0214 Lab Sample ID: 680-98489-1 MSD Prep Type: Total/NA

Matrix: Water

Analysis Batch: 316242

	•	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
	Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
-	Chloride	20		25.0	42.1		mg/L	*****	90	85 - 115	1	30

Lab Sample ID: 680-98489-3 DU Client Sample ID: GWE-5M-0214 Prep Type: Total/NA

Matrix: Water

Analysis Batch: 316242

•	Sample	Sample		ĐU	DU				RPD
Analyte	Result	Qualifier		Result	Qualifier	Unit	D	RPD	Limit
Chloride	47		~~~~~~~	46.9		mg/L		 0.4	30

# Method: 353.2 - Nitrogen, Nitrate-Nitrite

Client Sample ID: Method Blank Lab Sample ID: MB 680-315170/13 Prep Type: Total/NA

Matrix: Water

Analysis Batch: 315170

Analysis Daton, 515170									
	MB	MB							
Analyte	Result	Qualifier	RL	MÐL	Unit	Đ	Prepared	Analyzed	Dil Fac
Nitrate as N	0.050	U^	0.050	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	mg/L	2,000	armanana — —	02/11/14 19:08	1

Lab Sample ID: LCS 680-315170/14

Matrix: Water

Analysis Batch: 315170

,	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Nitrate as N	 0.500	0.555	۸ *	mg/L		(111)	90 - 110	
Nitrate Nitrite as N	1.00	1.07		mg/L		107	90 - 110	
Nitrite as N	0.500	0.517		mg/L		103	90.110	

TestAmerica Savannah

Prep Type: Total/NA

Client Sample ID: Lab Control Sample

		QC	Samp	ole Resu	Its						
lient: Solutia Inc. troject/Site: WGK Long Term Monitor	ing - 1Q	14						TestAme	erica Job ID ;	: 680-98 SDG: KI	
flethod: 375.4 - Sulfate											
Lab Sample ID: MB 680-316246/23								Client S	Sample ID: I	Method	Blank
Matrix: Water									Prep T	ype: To	tai/NA
Analysis Batch: 316246											
	_	MB MB					_		4		64 F.
Analyte Sulfate	R:	esult Qualifier		RL 5.0	MDL Unit		D	Prepared	Analyz 02/18/14		Dil Fac
ьштате		5.0 U		5.0	mg/L				02/18/14	17:15	
Lab Sample ID: LCS 680-316246/6 Matrix: Water							Clier	nt Sample	D: Lab Co	ontrol S ype: To	•
Analysis Batch: 316246										<b>,</b>	
<del>-</del>			Spike	LCS	LCS				%Rec.		
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits		
Sulfate			20.0	19.9		mg/L	***************************************	100	75 - 125		
Lab Sample ID: 680-98489-1 MS Matrix: Water								Client	Sample ID: Prep T	GWE-59 ype: To	
Analysis Batch: 316246											
	•	Sample	Spike		MS		_		%Rec.		
Analyte		Qualifier	Added		Qualifier	Unit	D	·	Limits		endormon nomeno
Sulfate	74		20.0	94.9	l	mg/L		104	75 - 125		
Lab Sample ID: 680-98489-1 MSD								Client S	Sample ID:	GWE-5	S-0214
Matrix: Water									Prep T	ype: To	tal/NA
Analysis Batch: 316246											
•	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	· · · · · · · · · · · · · · · · · · ·	Qualifier	Added		Qualifier	Unit	D		Limits	RPD	Limit
Sulfate	74		20.0	93.5	i	mg/L		97	75 - 125	1	30
Lab Sample ID: 680-98489-3 DU								Client S	Sample ID:	GWE-5N	<b>/</b> -0214
Matrix: Water									Ргер Т	ype: To	tal/NA
Analysis Batch: 316246											
	Sample	Sample		DU	עם י						RPD
Analyte	Result	Qualifier		Result	Qualifier	Unit	D			RPD	Limit
Sulfate	130			132		mg/L				0.5	30
lethod: 415.1 - DOC											
Lab Sample ID: MB 680-315513/2-A	i.							Client !	Sample ID:		
Matrix: Water									Prep Ty	pe: Dis:	soive

Client Sample ID: Lab Control Sample Lab Sample ID: LCS 680-315513/1-A Matrix: Water Prep Type: Dissolved Analysis Batch: 315508 LCS LCS %Rec. Spike Added Result Qualifier Unit Limits Dissolved Organic Carbon 20.0 20.6 mg/L 103 80 - 120

RL

1.0

MDL Unit

mg/L

MB MB

1.0 U

Result Qualifier

Analysis Batch: 315508

Dissolved Organic Carbon

Analyte

TestAmerica Savannah

Analyzed

02/13/14 09:24

Prepared

Dil Fac

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98489-1

SDG: KPS109

Method: 415.1 - DOC (Continued)

Lab Sample ID: 680-98489-2 MS Client Sample ID: GWE-5S-F(0.2)-0214 Prep Type: Dissolved Matrix: Water

Analysis Batch: 315508

Spike MS MS %Rec. Sample Sample Result Qualifier Added Result Qualifier Unit %Rec Limits Dissolved Organic Carbon 2.5 20,0 22.6 mg/L 100 80 - 120

Lab Sample ID: 680-98489-2 MSD Client Sample ID: GWE-5S-F(0.2)-0214 Matrix: Water Prep Type: Dissolved

Analysis Batch: 315508

RPD Sample Sample Spike MSD MSD %Rec. Limits Limit Analyte Result Qualifier Added Result Qualifier Unit %Rec RPD Dissolved Organic Carbon 2.5 20.0 22 4 100 80 - 120 mg/L

Client Sample ID: GWE-5D-F(0.2)-0214 Lab Sample ID: 680-98489-6 DU Prep Type: Dissolved Matrix: Water

Analysis Batch: 315508

Sample Sample DU DU RPD Limit Analyte Result Qualifier Result Qualifier Unit 2.5 Dissolved Organic Carbon 2.60 mg/L

Method: 415.1 - TOC

Lab Sample ID: MB 680-315506/2 Client Sample ID: Method Blank

Matrix: Water

Analysis Batch: 315506

мв мв Result Qualifier MDL Unit Analyzed Dil Fac Analyte RL Prepared 02/12/14 22:43 Total Organic Carbon 1.0 U 1.0 mg/L

Lab Sample ID: LCS 680-315506/5 Client Sample ID: Lab Control Sample Prep Type: Total/NA

Matrix: Water

Analysis Batch: 315506

%Rec. LCS LCS Spike Analyte Added Result Qualifier Unit %Rec Limits Total Organic Carbon 20,0 21.8 mg/L 109 80 - 120

TestAmerica Savannah

Prep Type: Total/NA

# **QC Association Summary**

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98489-1

SDG: KPS109

#### GC/MS VOA

Analys	is Ba	tch:	316	6403
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Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-98489-5	GWE-5D-0214	Total/NA	Water	8260B	
LCS 680-316403/4	Lab Control Sample	Total/NA	Water	8260B	3
LCSD 680-316403/5	Lab Control Sample Dup	Total/NA	Water	8260B	
MB 680-316403/8	Method Blank	Total/NA	Water	8260B	

#### Analysis Batch: 316608

Lab Sample ID 680-98489-7 LCS 680-316608/5 LCSD 680-316608/9	Client Sample ID 1Q14 LTM Trip Blank #4 Lab Control Sample Lab Control Sample Dup	Prep Type Total/NA Total/NA Total/NA Total/NA	Matrix Water Water Water	Method 8260B 8260B 8260B 8260B	Prep Batch
MB 680-316608/7	Method Blank	Total/NA	Water	8260B	

# Analysis Batch: 316609

Lab Sample ID	Cilent Sample ID	Prep Type	Matrix	Method	Prep Batch
680-98489-1	GWE-5S-0214	Total/NA	Water	8260B	
680-98489-3	GWE-5M-0214	Total/NA	Water	8260B	
LCS 680-316609/4	Lab Control Sample	Total/NA	Water	8260B	
LCSD 680-316609/5	Lab Control Sample Dup	Total/NA	Water	8260B	
MB 680-316609/8	Method Blank	Total/NA	Water	8260B	

# GC VOA

# Analysis Batch: 315596

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-98489-1	GWE-5S-0214	Total/NA	Water	RSK-175	
680-98489-3	GWE-5M-0214	Total/NA	Water	R\$K-175	
680-98489-5	GWE-5D-0214	Total/NA	Water	RSK-175	
LCS 680-315596/4	Lab Control Sample	Total/NA	Water	RSK-175	
LCS 680-315596/6	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 680-315596/5	Lab Control Sample Dup	Total/NA	Water	RSK-175	
LCSD 680-315596/7	Lab Control Sample Dup	Total/NA	Water	RSK-175	
MB 680-315596/8	Method Blank	Total/NA	Water	RSK-175	

### Metals

# Prep Batch: 315183

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batc
680-98489-1	GWE-5\$-0214	Total Recoverable	Water	3005A	
680-98489-1 MS	GWE-5S-0214	Total Recoverable	Water	3005A	
680-98489-1 MSD	GWE-5S-0214	Total Recoverable	Water	3005A	
680-98489-2	GWE-5S-F(0.2)-0214	Dissolved	Water	3005A	
680-98489-3	GWE-5M-0214	Total Recoverable	Water	3005A	
680-98489-4	GWE-5M-F(0.2)-0214	Dissolved	Water	3005A	
680-98489-5	GWE-5D-0214	Total Recoverable	Water	3005A	
680-98489-6	GWE-5D-F(0.2)-0214	Dissolved	Water	3005A	
LCS 680-315183/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
MB 680-315183/1-A	Method Blank	Total Recoverable	Water	3005A	

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MAR 07 2014

# **QC Association Summary**

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98489-1

SDG: KP\$109

# Metals (Continued)

Ana	lysis	Batch	: 31	5428
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Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-98489-1	GWE-5S-0214	Total Recoverable	Water	6010C	315183
680-98489-1 MS	GWE-5S-0214	Total Recoverable	Water	6010C	315183
680-98489-1 MSD	GWE-5S-0214	Total Recoverable	Water	6010C	315183
680-98489-2	GWE-5S-F(0.2)-0214	Dissolved	Water	6010C	315183
680-98489-3	GWE-5M-0214	Total Recoverable	Water	6010C	315183
680-98489-4	GWE-5M-F(0.2)-0214	Dissolved	Water	6010C	315183
680-98489-5	GWE-5D-0214	Total Recoverable	Water	6010C	315183
680-98489-6	GWE-5D-F(0.2)-0214	Dissolved	Water	6010C	315183
LCS 680-315183/2-A	Lab Control Sample	Total Recoverable	Water	6010C	315183
MB 680-315183/1-A	Method Blank	Total Recoverable	Water	6010C	315183

# **General Chemistry**

# Analysis Batch: 315170

Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batch
680-98489-1	GWE-5S-0214	Total/NA	Water	353.2	
680-98489-3	GWE-5M-0214	Total/NA	Water	353.2	
680-98489-5	GWE-5D-0214	Total/NA	Water	353.2	
LCS 680-315170/14	Lab Control Sample	Total/NA	Water	353.2	
MB 680-315170/13	Method Blank	Total/NA	Water	353.2	

#### Analysis Batch: 315506

-	Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
1	680-98489-1	GWE-5S-0214	Total/NA	Water	415.1	***************************************
	680-98489-3	GWE-5M-0214	Total/NA	Water	415.1	
-	680-98489-5	GWE-5D-0214	Total/NA	Water	415.1	
i	LCS 680-315506/5	Lab Control Sample	Total/NA	Water	415.1	
İ	MB 680-315506/2	Method Blank	Total/NA	Water	415.1	

#### Analysis Batch: 315508

Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batch
680-98489-2	GWE-5S-F(0.2)-0214	Dissolved	Water	415.1	
680-98489-2 MS	GWE-5S-F(0.2)-0214	Dissolved	Water	415.1	
680-98489-2 MSD	GWE-5S-F(0.2)-0214	Dissolved	Water	415.1	
680-98489-4	GWE-5M-F(0.2)-0214	Dissolved	Water	415.1	
680-98489-6	GWE-5D-F(0.2)-0214	Dissolved	Water	415.1	
680-98489-6 DU	GWE-5D-F(0.2)-0214	Dissolved	Water	415.1	
LCS 680-315513/1-A	Lab Control Sample	Dissolved	Water	415.1	315513
MB 680-315513/2-A	Method Blank	Dissolved	Water	415.1	315513

#### Filtration Batch: 315513

į	Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
	LCS 680-315513/1-A	Lab Control Sample	Dissolved	Water	FILTRATION	TTT Charles of the Section of the Se
The state of	MB 680-315513/2-A	Method Blank	Dissolved	Water	FILTRATION	

# Analysis Batch: 315783

7						
	Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
	680-98489-1	GWE-5S-0214	Total/NA	Water	310.1	
	680-98489-3	GWE-5M-0214	Total/NA	Water	310.1	
- 1	680-98489-5	GWE-5D-0214	Total/NA	Water	310.1	

# **QC Association Summary**

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98489-1

SDG: KPS109

# General Chemistry (Continued)

#### Analysis Batch: 315783 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 680-315783/6	Lab Control Sample	Total/NA	Water	310.1	
LCSD 680-315783/30	Lab Control Sample Dup	Totai/NA	Water	310.1	
MB 680-315783/5	Method Blank	Total/NA	Water	310.1	

#### Analysis Batch: 316242

Lab Sample ID	Client Sample ID	Prep Type		Method	Prep Batch
680-98489-1	0-98489-1 GWE-5S-0214		Water	325.2	
680-98489-1 MS	GWE-5S-0214	Total/NA	Water	325.2	
680-98489-1 MSD	GWE-5S-0214	Total/NA	Water	325.2	
680-98489-3	GWE-5M-0214	Total/NA	Water	325.2	
680-98489-3 DU	GWE-5M-0214	Total/NA	Water	325.2	
680-98489-5	GWE-5D-0214	Total/NA	Water	325.2	
LCS 680-316242/1	Lab Control Sample	Total/NA	Water	325.2	
MB 680-316242/15	Method Blank	Total/NA	Water	325.2	

# Analysis Batch: 316246

Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batch
680-98489-1	GWE-5S-0214	Total/NA	Water	375.4	
680-98489-1 MS	GWE-5S-0214	Total/NA	Water	375.4	
680-98489-1 MSD	GWE-5S-0214	Total/NA	Water	375.4	
680-98489-3	GWE-5M-0214	Total/NA	Water	375.4	
680-98489-3 DU	GWE-5M-0214	· Total/NA	Water ·	375.4	
680-98489-5	GWE-5D-0214	Total/NA	Water	375.4	
LCS 680-316246/6	Lab Control Sample	Total/NA	Water	375.4	
MB 680-316246/23	Method Blank	Total/NA	Water	375.4	

#### Lab Chronicle

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98489-1

SDG: KPS109

Client Sample ID: GWE-5S-0214

Date Collected: 02/10/14 12:35 Date Received: 02/11/14 10:08

Lab Sample ID: 680-98489-1

Matrix: Water

	Batch	Batch		Dilution	Batch	Prepared		
Ргер Туре	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	316609	02/21/14 16:00	MMT	TAL SAV
Total/NA	Analysis	RSK-175		1	315596	02/14/14 11:08	TAR	TAL SAV
Total Recoverable	Prep	3005A			315183	02/12/14 08:27	вјв	TAL SAV
Total Recoverable	Analysis	6010C		1	315428	02/12/14 22:15	BCB	TAL SAV
Total/NA	Analysis	353.2		1	315170	02/11/14 19:31	GRX	TAL SAV
Total/NA	Analysis	415.1		1	315506	02/13/14 03:07	CMP	TAL SAV
Total/NA	Analysis	310.1		1	315783	02/13/14 21:02	LBH	TAL SAV
Total/NA	Analysis	325.2		1	316242	02/18/14 12:11	JME	TAL SAV
Total/NA	Analysis	375.4		5	316246	02/18/14 18:05	JME	TAL SAV

Client Sample ID: GWE-5S-F(0.2)-0214

Date Collected: 02/10/14 12:35

Date Received: 02/11/14 10:08

Lab Sample ID: 680-98489-2

Matrix: Water

Batch Batch Dilution Batch Prepared Prep Type Method Type Run Factor Number or Analyzed Analyst Lab Prep Dissolved 3005A 315183 02/12/14 08:27 BJB TAL SAV Dissolved Analysis 6010C .1 315428 02/12/14 22:47 BCB TAL SAV Dissolved Analysis 415.1 315508 02/13/14 09:38 TAL SAV

Client Sample ID: GWE-5M-0214

Date Collected: 02/10/14 14:25

Date Received: 02/11/14 10:08

Lab Sample 1D: 660-96469-3	e ID: 680-98489-3
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Matrix: Water

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	316609	02/21/14 16:29	MMT	TAL SAV
Total/NA	Analysis	RSK-175		1	315596	02/14/14 11:21	TAR	TAL SAV
Total Recoverable	Prep	3005A			315183	02/12/14 08:27	вјв	TAL SAV
Total Recoverable	Analysis	6010C		1	315428	02/12/14 22:52	BCB	TAL SAV
Total/NA	Analysis	353.2		1	315170	02/11/14 19:32	GRX	TAL SAV
Total/NA	Analysis	415.1		1	315506	02/13/14 03:25	CMP	TAL SAV
Total/NA	Analysis	310.1		1	315783	02/13/14 20:45	LBH	TAL SAV
Total/NA	Analysis	325.2		1	316242	02/18/14 12:11	JME	TAL SAV
Total/NA	Analysis	375.4		5	316246	02/18/14 17:21	JME	TAL SAV

Client Sample ID: GWE-5M-F(0.2)-0214

Date Collected: 02/10/14 14:25

Date Received: 02/11/14 10:08

Lab Sample ID: 680-98489-4

Matrix: Water

		Batch	Batch		Dilution	Batch	Prepared		
	Ргер Туре	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
1	Dissolved	Prep	3005A			315183	02/12/14 08:27	вјв	TAL SAV
1	Dissolved	Analysis	6010C		1	315428	02/12/14 22:56	BCB	TAL SAV

## Lab Chronicle

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98489-1

**SDG: KPS109** 

Client Sample ID: GWE-5M-F(0.2)-0214

Date Collected: 02/10/14 14:25 Date Received: 02/11/14 10:08 Lab Sample ID: 680-98489-4

Matrix: Water

Batch Batch Dilution Batch Prepared Method Prep Type Туре Run Factor Number or Analyzed Analyst Lab TAL SAV Dissolved Analysis 415.1 315508 02/13/14 10:1B CMP

Client Sample ID: GWE-5D-0214

Date Collected: 02/10/14 15:55 Date Received: 02/11/14 10:08 Lab Sample ID: 680-98489-5

Matrix: Water

Batch Dilution Batch Prepared Prep Type Type Method Lab Run Factor Number or Analyzed Analyst Analysis Total/NA 8260B MMT TAL SAV 2 316403 02/20/14 18:33 Total/NA RSK-175 Analysis 1 315596 02/14/14 11:34 TAR TAL SAV Total Recoverable Prep 3005A 315183 02/12/14 08:27 BJB TAL SAV Total Recoverable Analysis 6010C 315428 02/12/14 23:01 BCB TAL SAV Total/NA 353.2 TAL SAV Analysis 315170 02/11/14 19:33 GRX 1 Total/NA TAL SAV Analysis 415.1 315506 02/13/14 03:44 CMP Total/NA Analysis 310.1 315783 02/13/14 20:53 TAL SAV Total/NA Analysis 325.2 316242 02/18/14 12:31 TAL SAV 2 Total/NA JME TAL SAV Analysis 375.4 316246 02/18/14 17:35 10

Client Sample ID: GWE-5D-F(0.2)-0214

Date Collected: 02/10/14 15:55

Date Received: 02/11/14 10:08

Lab Sample ID: 680-98489-6

Matrix: Water

	Batch	Batch		Dilution	Batch	Prepared		
Ргер Туре	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			315183	02/12/14 08:27	BJB	TAL SAV
Dissolved	Analysis	6010C		1	315428	02/12/14 23:06	BCB	TAL SAV
Dissolved	Analysis	415.1		1	315508	02/13/14 11:02	CMP	TAL SAV

Client Sample ID: 1Q14 LTM Trip Blank #4

Date Collected: 02/10/14 00:00

Date Received: 02/11/14 10:08

Lab	Sample	: ID: 680	0-98489-7

Matrix: Water

	Batch	Batch		Dilution	Batch	Prepared		
Ргер Туре	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B	PROFESSION OF THE PROFESSION O	1	316608	02/21/14 14:19	MMT	TAL SAV

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

TestAmerica Savannah

MAR 07 2014

#### Savannah

5102 LaRoche Avenue

# **Chain of Custody Record**



Savannah, GA 31404

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Client Contact	Project M	anager: Bol	Billman			Sit	e Co	ntac	ct: M	icha	el C	orbe	tt	10	2 <b>66</b> 3	డ	116	M-	7			COC	C No	ı:				
URS Corporation	Tel/Fax: (314) 743-4108					Lab Contact: Michele Kersey							С	Carrier: Fed			de	X				<u>i                                    </u>	of	L	COCs	i		
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(314) 429-0462 FAX	7 🗆		weeks '							9 :	2		0	1					ļ			SDC	G No					
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GWE-5M-F(0.2)-0214		1425	G	Water	2	Х						Ĩ	1	1				ĺ	T		T							
GWE-5D-0214		1555	G	Water	14		3	I.	1	1	3	2 3	3									П						
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Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=Na Possible Hazard Identification	OH; 6= Othe	r					San	nnie	o Dis	nos	$\frac{2}{2I}$	Δ For	ma	v h		PSSP	ri if s	ami	oles	are	retai	ined	lona	er thai	n 1 n	ionth	}	
Non-Hazard Flammable Skin Irritant	ison	R	pnown					-	Returr		-			-	Disp							ive F				Monti		
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680-98489 Chain of Custody

### Login Sample Receipt Checklist

Client: Solutia Inc.

Job Number: 680-98489-1

SDG Number: KPS109

List Source: TestAmerica Savannah

Login Number: 98489 List Number: 1

MS/MSDs

<6mm (1/4").

Multiphasic samples are not present.

Residual Chlorine Checked.

Samples do not require splitting or compositing.

Creator: Banda, Christy S

There is sufficient vol. for all requested analyses, incl. any requested

Containers requiring zero headspace have no headspace or bubble is

Question Answer Comment Radioactivity wasn't checked or is </= background as measured by a survey N/A meter. The cooler's custody seal, if present, is intact. True Sample custody seals, if present, are intact. True The cooler or samples do not appear to have been compromised or True tampered with. Samples were received on ice. True Cooler Temperature is acceptable. True Cooler Temperature is recorded. True COC is present. True COC is filled out in ink and legible. True COC is filled out with all pertinent information. True Is the Field Sampler's name present on COC? True There are no discrepancies between the containers received and the COC. True Samples are received within Holding Time. True Sample containers have legible labels. True Containers are not broken or leaking. True Sample collection date/times are provided. True Appropriate sample containers are used. True Sample bottles are completely filled. True Sample Preservation Verified. True

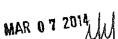
True

True

Тгие

True

N/A



# **Certification Summary**

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98489-1

SDG: KPS109

# Laboratory: TestAmerica Savannah

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
	AFCEE		SAVLAB	
A2LA	DoD ELAP		399.01	02-28-15
42LA	ISO/IEC 17025		399.01	02-28-15
Alabama	State Program	4	41450	06-30-14
Arkansas DEQ	State Program	6	88-0692	01-31-15
California	NELAP	9	3217CA	07-31-14
Colorado	State Program	8	N/A	12-31-14
Connecticut	State Program	1	PH-0161	03-31-15
Florida	NELAP	4	E87052	06-30-14
GA Dept. of Agriculture	State Program	4	N/A	06-30-14
Georgia	State Program	4	N/A	06-30-14
Georgia	State Program	4	803	06-30-14
Guam	State Program	9	09-005r	04-17-14 *
Hawaii	State Program	9	N/A	06-30-14
llinois	NELAP	5	200022	11-30-14
ndiana	State Program	5	N/A	06-30-14
owa	State Program	7	353	07-01-15
Kentucky (DW)	State Program	4	90084	12-31-14
(entucky (UST)	State Program	4	18	06-30-14
ouisiana	NELAP	. 6	LA100015	12-31-14
Maine	State Program	1	GA00006	08-16-14
Maryland	State Program	3	250	12-31-14
Massachusetts	State Program	1	M-GA006	06-30-14
Michigan	State Program	5	9925	06-30-14
Viississippi	State Program	4	N/A	06-30-14
Montana	State Program	8	CERT0081	01-01-15
Nebraska	State Program	7	TestAmerica-Savannah	06-30-14
New Jersey	NELAP	2	GA769	06-30-14
New Mexico	State Program	6	N/A	06-30-14
vew York	NELAP	2	10842	03-31-14 *
North Carolina DENR	State Program	4	269	12-31-14
North Carolina DHHS	State Program	4	13701	07-31-14
Qklahoma	State Program	6	9984	08-31-14
Pennsylvania	NELAP	3	68-00474	06-30-14
Puerto Rico	State Program	2	GA00006	12-31-14
South Carolina	State Program	4	98001	06-30-14
Tennessee	State Program	4	TN02961	06-30-14
fexas	NELAP	6	T104704185-08-TX	11-30-14
JSDA	Federal		SAV 3-04	04-07-14 *
/irginia	NELAP	3	460161	06-14-14
Washington	State Program	10	C1794	06-10-14
West Virginia DEP	State Program	3	94	06-30-14
Nest Virginia DHHR	State Program	3	9950C	12-31-14
Visconsin	State Program	5	999819810	08-31-14
Wyoming	State Program	8	8TMS-L	06-30-14

<sup>\*</sup> Expired certification is currently pending renewal and is considered valid.

# Solutia Krummrich Data Review WGK LTM 1Q14

**Laboratory SDG: KPS110** 

Data Reviewer: Melissa Mansker Peer Reviewer: Elizabeth Kunkel

Date Reviewed: 3/10/2014

Guidance: USEPA National Functional Guidelines for Superfund Organic Methods Data Review 2008. USEPA National Functional Guidelines for Superfund

**Inorganic Data Review 2010** 

Work Plan: Revised Long-Term Monitoring Program (LTMP) Work Plan (Solutia

2009)

Sample Identification									
ESL-MW-A-0214	ESL-MW-A-F(0.2)-0214								
ESL-MW-C1-0214	ESL-MW-C1-F(0.2)-0214								
1Q14 LTM Trip Blank #5									

# 1.0 Data Package Completeness

Were all items delivered as specified in the QAPP and COC as appropriate?

Yes

# 2.0 Laboratory Case Narrative \ Cooler Receipt Form

Were problems noted in the laboratory case narrative or cooler receipt form?

Yes, the laboratory case narrative indicated that the LCS recovery was outside evaluation criteria for nitrate. Samples were diluted due to high levels of chloride and sulfate. Instrument calibration was outside evaluation criteria for nitrate. These issues are addressed further in the appropriate sections below.

The cooler receipt form did not indicate any problems.

# 3.0 Holding Times

Were samples extracted/analyzed within applicable limits?

Yes

### 4.0 Blank Contamination

Were any analytes detected in the Method Blanks, Field Blanks or Trip Blanks?

No

#### 5.0 Laboratory Control Sample

Were LCS recoveries within evaluation criteria?

No

LCS/LCSD ID	LCS/LCSD ID Parameter		LCS/LCSD Recovery	RPD	LCS/LCSD/ RPD Criteria	
LCS 680-315374/14	General chemistry	Nitrate	111	NA	90-110	

Analytical data that required qualification based on LCS data are included in the table below. Analytical data reported as non-detect and associated with LCS recoveries above evaluation criteria, indicating a possible high bias, did not require qualification.

Sample ID	Parameter	Analyte	Qualification
ESL-MW-A-0214	General chemistry	Nitrate	J

# 6.0 Surrogate Recoveries

Were surrogate recoveries within evaluation criteria?

Yes

# 7.0 Matrix Spike and Matrix Spike Duplicate Recoveries

Were MS/MSD samples collected as part of this SDG?

No

# 8.0 Internal Standard (IS) Recoveries

Were internal standard area recoveries within evaluation criteria?

Yes

#### 9.0 Laboratory Duplicate Results

Were laboratory duplicate samples collected as part of this SDG?

No

# 10.0 Field Duplicate Results

Were field duplicate samples collected as part of this SDG?

No

#### 10.0 Sample Dilutions

For samples that were diluted and nondetect, were undiluted results also reported?

Not applicable; analytes were detected in samples that were diluted.

### 11.0 Additional Qualifications

Were additional qualifications applied?

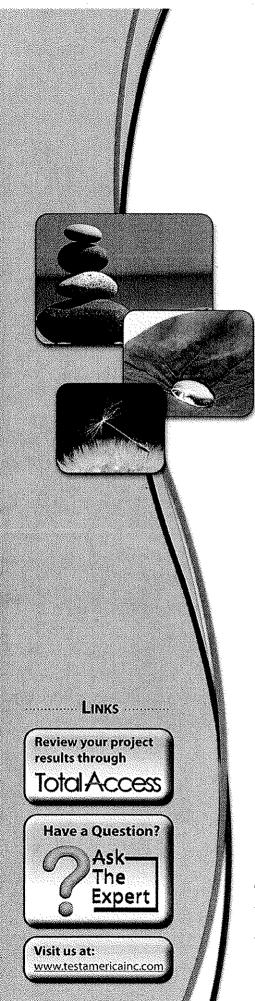
Additionally, the following samples are qualified, as summarized below, due to instrument calibration outside evaluation criteria for nitrate. Nitrate in sample ESL-MW-A-0214 was previously qualified in Section 5.0 of this data review due to LCS recovery data; no further qualification of sample ESL-MW-A-0214 was required.

Sample ID	Parameter	Analyte	Qualification
ESL-MW-C1-0214	General chemistry	Nitrate	UJ

# SDG KPS110

Results of Samples from Monitoring Well:

ESL-MW-A ESL-MW-C1



# **TestAmerica**

THE LEADER IN ENVIRONMENTAL TESTING

# **ANALYTICAL REPORT**

TestAmerica Laboratories, Inc. TestAmerica Savannah 5102 LaRoche Avenue Savannah, GA 31404 Tel: (912)354-7858

TestAmerica Job ID: 680-98549-1

TestAmerica Sample Delivery Group: KPS110

Client Project/Site: WGK Long Term Monitoring - 1Q14

For:

Solutia Inc. 575 Maryville Centre Dr.

Saint Louis, Missouri 63141

Attn: Mr. Jerry Rinaldi

Michele KKusey

Authorized for release by: 2/26/2014 2:56:33 PM

Michele Kersey, Project Manager I (912)354-7858 michele.kersey@testamericainc.com

Reviewed on MAR 10 25 M

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

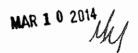
Results relate only to the items tested and the sample(s) as received by the laboratory.

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

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Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98549-1

SDG: KPS110

Job ID: 680-98549-1

Laboratory: TestAmerica Savannah

Narrative

#### **CASE NARRATIVE**

Client: Solutia Inc.

Project: WGK Long Term Monitoring - 1Q14

Report Number: 680-98549-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all faboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In the event of interference or analytes present at high concentrations, samples may be diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

#### RECEIPT

The samples were received on 2/12/2014 11:11 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.2° C.

#### **VOLATILE ORGANIC COMPOUNDS (GC-MS)**

Samples ESL-MW-A-0214 (680-98549-1), ESL-MW-C1-0214 (680-98549-3) and 1Q14 LTM Trip Blank #5 (680-98549-5) were analyzed for Volatile Organic Compounds (GC-MS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 02/20/2014 and 02/21/2014.

No difficulties were encountered during the volatiles analysis.

All quality control parameters were within the acceptance limits.

#### DISSOLVED GASES

Samples ESL-MW-A-0214 (680-98549-1) and ESL-MW-C1-0214 (680-98549-3) were analyzed for dissolved gases in accordance with RSK-175. The samples were analyzed on 02/24/2014.

No difficulties were encountered during the dissolved gases analysis.

All quality control parameters were within the acceptance limits.

#### METALS (ICP)

Samples ESL-MW-A-F(0.2)-0214 (680-98549-2) and ESL-MW-C1-F(0.2)-0214 (680-98549-4) were analyzed for Metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared on 02/13/2014 and analyzed on 02/14/2014.

No difficulties were encountered during the metals analysis.

All quality control parameters were within the acceptance limits.

#### METALS (ICP)

Samples ESL-MW-A-0214 (680-98549-1) and ESL-MW-C1-0214 (680-98549-3) were analyzed for Metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared on 02/13/2014 and analyzed on 02/14/2014.

No difficulties were encountered during the metals analysis.

All quality control parameters were within the acceptance limits.

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TestAmerica Savannah

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Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98549-1 SDG: KPS110

#### Job ID: 680-98549-1 (Continued)

Laboratory: TestAmerica Savannah (Continued)

Samples ESL-MW-A-0214 (680-98549-1) and ESL-MW-C1-0214 (680-98549-3) were analyzed for alkalinity in accordance with EPA Method 310.1. The samples were analyzed on 02/13/2014 and 02/19/2014.

No difficulties were encountered during the alkalinity analysis.

All quality control parameters were within the acceptance limits.

#### CHLORIDE

Samples ESL-MW-A-0214 (680-98549-1) and ESL-MW-C1-0214 (680-98549-3) were analyzed for Chloride in accordance with EPA Method 325.2. The samples were analyzed on 02/18/2014.

Samples ESL-MW-A-0214 (680-98549-1)[2X] and ESL-MW-C1-0214 (680-98549-3)[2X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No difficulties were encountered during the chloride analysis.

All quality control parameters were within the acceptance limits.

#### NITRATE-NITRITE AS NITROGEN

Samples ESL-MW-A-0214 (680-98549-1) and ESL-MW-C1-0214 (680-98549-3) were analyzed for nitrate-nitrite as nitrogen in accordance with EPA Method 353.2. The samples were analyzed on 02/12/2014.

The Nitrate + Nitrite result is obtained from a calculation incorporating the Nitrate and Nitrite results. Re-analysis is not performed if QC for the calculated analyte does not meet acceptance criteria, provided the QC results for the component analytes are acceptable. Data have been qualified to denote this situation.

Refer to the QC report for details.

No other difficulties were encountered during the nitrate-nitrite analysis.

All other quality control parameters were within the acceptance limits.

#### SULFATE

Samples ESL-MW-A-0214 (680-98549-1) and ESL-MW-C1-0214 (680-98549-3) were analyzed for sulfate in accordance with EPA Method 375.4. The samples were analyzed on 02/18/2014.

Samples ESL-MW-A-0214 (680-98549-1)[20X] and ESL-MW-C1-0214 (680-98549-3)[50X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No difficulties were encountered during the sulfate analysis.

All quality control parameters were within the acceptance limits.

#### TOTAL ORGANIC CARBON

Samples ESL-MW-A-0214 (680-98549-1) and ESL-MW-C1-0214 (680-98549-3) were analyzed for total organic carbon in accordance with EPA Method 415.1. The samples were analyzed on 02/13/2014.

No difficulties were encountered during the TOC analysis.

All quality control parameters were within the acceptance limits.

#### DISSOLVED ORGANIC CARBON (DOC)

Samples ESL-MW-A-F(0.2)-0214 (680-98549-2) and ESL-MW-C1-F(0.2)-0214 (680-98549-4) were analyzed for Dissolved Organic Carbon (DOC) in accordance with EPA Method 415.1. The samples were analyzed on 02/13/2014.

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Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98549-1

SDG: KPS110

Job ID: 680-98549-1 (Continued)

Laboratory: TestAmerica Savannah (Continued)

No difficulties were encountered during the DOC analysis.

All quality control parameters were within the acceptance limits.

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TestAmerica Savannah

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# **Sample Summary**

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98549-1

SDG: KPS110

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-98549-1	ESL-MW-A-0214	Water	02/11/14 15:00	02/12/14 11:11
680-98549-2	ESL-MW-A-F(0.2)-0214	Water	02/11/14 15:00	02/12/14 11:11
680-98549-3	ESL-MW-C1-0214	Water	02/11/14 12:55	02/12/14 11:11
680-98549-4	ESL-MW-C1-F(0.2)-0214/	Water	02/11/14 12:55	02/12/14 11:11
680-98549-5	1Q14 LTM Trip Blank #5 /	Water	02/11/14 00:00	02/12/14 11:11

MAR 1 0 2014

# **Method Summary**

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98549-1

SDG: KPS110

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL SAV
RSK-175	Dissolved Gases (GC)	RSK	TAL SAV
5010C	Metals (ICP)	SW846	TAL SAV
310.1	Alkalinity	MCAVW	TAL SAV
25.2	Chloride	MCAWW	TAL SAV
53.2	Nitrogen, Nitrate-Nitrite	MCAVW	TAL SAV
375,4	Sulfate	MCAVW	TAL SAV
15.1	TOC	MCAWW	TAL SÁV
15.1	DOC	MCAWW	TAL SAV

#### Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

RSK = Sample Prep And Calculations For Dissolved Gas Analysis In Water Samples Using A GC Headspace Equilibration Technique, RSKSOP-175,

Rev. 0, 8/11/94, USEPA Research Lab

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

#### Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

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TestAmerica Savannah

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# **Definitions/Glossary**

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98549-1

SDG: KPS110

#### Qualifiers

#### GC/MS VOA

Qualifier Qualifier Description

J Indicates the analyte was analyzed for but not detected.

#### GC VOA

Qualifier

Qualifier Description

U Indicates the analyte was analyzed for but not detected.

#### Metals

Qualifier

Qualifier Description

U Indicates the analyte was analyzed for but not detected.

#### **General Chemistry**

Qualifier

Qualifler Description

LCS or LCSD exceeds the control limits

ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC exceeds the control limits.

U Indicates the analyte was analyzed for but not detected.

#### Glossary

Abbreviation

These commonly used abbreviations may or may not be present in this report.

Listed under the "D" column to designate that the result is reported on a dry weight basis

%R Percent Recovery
CNF Contains no Free Liquit

CNF Contains no Free Liquid

DER Duplicate error ratio (normalized absolute difference)

Dil Fac Dilution Factor

DL, RA, RE, IN Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample

DLC Decision level concentration

MDA Minimum detectable activity

EDL Estimated Detection Limit

MDC Minimum detectable concentration

MDL Method Detection Limit
ML Minimum Level (Dioxin)

NC Not Calculated

ND Not detected at the reporting limit (or MDL or EDL if shown)

PQL Practical Quantitation Limit

QC Quality Control
RER Relative error ratio

RL Reporting Limit or Requested Limit (Radiochemistry)

RPD Relative Percent Difference, a measure of the relative difference between two points

TEF Toxicity Equivalent Factor (Dioxin)
TEQ Toxicity Equivalent Quotient (Dioxin)

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TestAmerica Savannah

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# **Detection Summary**

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98549-1

SDG: KPS110

#### Client Sample ID: ESL-MW-A-0214

Lab	Sampl	e ID:	680-98	549-1

Analyte	Result (	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	1.6		1.0		ug/L	1	*****	8260B	Total/NA
Chlorobenzene	3.5		1.0		ug/L	1		8260B	Total/NA
1,2-Dichlorobenzene	2.2		1.0		ug/L	1		8260B	Total/NA
1,4-Dichlorobenzene	3.0		1.0		ug/L	1		8260B	Total/NA
Methane	2.1		0.58		ug/L	1		RSK-175	Total/NA
fron	11		0.050		mg/L	1		6010C	Total
									Recoverable
Manganese	0.34		0.010		mg/L	1		6010C	Total
									Recoverable
Chloride	68		2.0		mg/L	2		325.2	Total/NA
Nitrate as N	0.52	・^ ブ	0.050		mg/L	1		353,2	Total/NA
Sulfate	480		100		mg/L	20		375.4	Total/NA
Total Organic Carbon	4.0		1.0		mg/L	1		415,1	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Ргер Туре
Alkalinity	270		5.0	and the state of the state to be a section to the s	mg/L	1		310.1	Total/NA
Carbon Dioxide, Free	15		5.0		mg/L	1		310.1	Total/NA

#### Client Sample ID: ESL-MW-A-F(0.2)-0214

#### Lab Sample ID: 680-98549-2

Secretary in	Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1	Iron, Dissolved	11		0.050		mg/L	1		6010C	Dissolved
-	Manganese, Dissolved	0.35		0.010		mg/L	1		6010C	Dissolved
	Dissolved Organic Carbon	3.4		1.0		mg/L	. 1		415.1	Dissolved

#### Client Sample ID: ESL-MW-C1-0214

# Lab Sample ID: 680-98549-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	1.3	***************************************	1.0	h shabhanananban	ug/L	1		8260B	Total/NA
Chlorobenzene	2.0		1.0		ug/L	1		8260B	Total/NA
1,2-Dichlorobenzene	1.5		1.0		ug/L	1		8260B	Total/NA
1,4-Dichlorobenzene	1.9		1.0		ug/L	1		8260B	Total/NA
Methane	2.3		0.58		ug/L	1		R\$K-175	Total/NA
fron	12		0.050		mg/L	1		6010C	Total
Manganese	0.42		0.010		mg/L	1		6010C	Recoverable Total
Chloride	. 99		2.0		mg/L	2		325.2	Recoverable Total/NA
Sulfate	760		250		mg/L	50		375.4	Total/NA
Total Organic Carbon	3.6		1.0		mg/L	1		415.1	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Ргер Туре
Alkalinity	330	***************************************	5.0		mg/L	1	_	310.1	Total/NA
Carbon Dioxide, Free	18		5.0		mg/L	1		310,1	Total/NA

#### Client Sample ID: ESL-MW-C1-F(0.2)-0214

#### Lab Sample ID: 680-98549-4

Analyte Iron, Dissolved	Result 12	Qualifier	RL 0.050	MDL	Unit mg/L	Dil Fac	Ð	Method 6010C	Prep Type Dissolved
Manganese, Dissolved	0.42		0.010		mg/L	1		6010C	Dissolved
Dissolved Organic Carbon	3.6		1.0		mg/L	1		415.1	Dissolved

This Detection Summary does not include radiochemical test results.

# **Detection Summary**

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98549-1

SDG: KPS110

Client Sample ID: 1Q14 LTM Trip Blank #5

Lab Sample ID: 680-98549-5

No Detections.

This Detection Summary does not include radiochemical test results.

Client: Solutia Inc.

Carbon Dioxide, Free

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98549-1

SDG: KPS110

Client Sample ID: ESL-MW-A-0214

Date Collected: 02/11/14 15:00

Lab Sample ID: 680-98549-1

Matrix: Water

Method: 8260B - Volatile Or	ganic Compounds (	(GC/MS)							
Analyte	•	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Benzene	1.6	PIAPEL/-E-E-E-E-E-E-E-E-E-E-E-E-E-E-E-E-E-E-	1.0		ug/L	-,-,		02/20/14 19:01	
Chlorobenzene	3.5		1.0		ug/L			02/20/14 19:01	
1,2-Dichlorobenzene	2.2		1.0		ug/L			02/20/14 19:01	
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			02/20/14 19:01	
1,4-Dichlorobenzene	3.0		1.0		ug/L			02/20/14 19:01	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	DII F
1-Bromofluorobenzene	93		70 - 130					02/20/14 19:01	
Dibromofluoromethane	94		70 - 130					02/20/14 19:01	
Toluene-d8 (Surr)	89		70 - 130					02/20/14 19:01	
Method: RSK-175 - Dissolve	ed Gases (GC)								
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil F
Ethane	1.1	Ū	1.1		ug/L			02/24/14 13:04	
Ethylene	1.0	U	1.0		ug/L			02/24/14 13:04	
Methane	2.1		0.58		ug/L			02/24/14 13:04	
Method: 6010C - Metals (ICI	P) - Total Recoverat	ole							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil F
ron	11		0.050		mg/L		02/13/14 09:21	02/14/14 D4:04	
Manganese .	0.34		. 0.010		mg/L		02/13/14 09:21	02/14/14 D4:04	
General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil F
Chloride	68	-	2.0		mg/L			02/18/14 12:34	
Nitrate as N	0.52	** 5	0.050		mg/L			02/12/14 22:17	
Sulfate	480		100		mg/L			02/18/14 18:07	
otal Organic Carbon	4.0		1.0		mg/L			02/13/14 08:01	
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil F
Alkalinity	270		5.0		mg/L			02/13/14 21:47	

5.0

mg/L

15

Total America Sources

TestAmerica Savannah

02/13/14 21:47

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98549-1

SDG: KPS110

Client Sample ID: ESL-MW-A-F(0.2)-0214

Date Collected: 02/11/14 15:00 Date Received: 02/12/14 11:11

Dissolved Organic Carbon

Lab Sample ID: 680-98549-2

02/13/14 12:36

Matrix: Water

Method: 6010C - Metals (ICP) - Dis	solved									
Analyte	Result	Qualifier	RL	MDL	Unit	ı	D	Prepared	Analyzed	Dil Fac
fron, Dissolved	11	***************************************	0.050	***************************************	mg/L			02/13/14 09:21	02/14/14 04:09	1
Manganese, Dissolved	0.35		0.010		mg/L			02/13/14 09:21	02/14/14 04:09	1
General Chemistry - Dissolved										
Analyte	Result	Qualifier	RL	MDL	Unit		D	Prepared	Analyzed	Dil Fac

1.0

mg/L

3.4

c 1 .

8

MAR 1 0 2014

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98549-1

SDG: KPS110

Client Sample ID: ESL-MW-C1-0214

Date Collected: 02/11/14 12:55 Date Received: 02/12/14 11:11 Lab Sample ID: 680-98549-3

Matrix: Water

Method: 8260B - Volatile Or			В.		11.4	_	S	A	54.5
Analyte		Qualifier	RL	MDL	******************	D	Prepared	Analyzed	Dil Fac
Benzene	1.3		1.0		ug/L			02/21/14 15:45	1
Chlorobenzene	2.0		1.0		ug/L			02/21/14 15:45	1
1,2-Dichlorobenzene	1.5		1.0		ug/L			02/21/14 15:45	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			02/21/14 15:45	1
1,4-Dichlorobenzene	1.9		1.0		ug/L			02/21/14 15:45	•
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
4-Bromofluorobenzene	99		70 - 130					02/21/14 15:45	
Dibromofluoromethane	98		70 - 130					02/21/14 15;45	
Toluene-d8 (Surr)	100		70 - 130					02/21/14 15:45	
Method: RSK-175 - Dissolve	ed Gases (GC)								
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Ethane	1.1	U	1.1		ug/L			02/24/14 13:17	-
Ethylene	1.0	U	1.0		ug/L			02/24/14 13:17	
Methane	2.3		0.58		ug/L			02/24/14 13:17	
Method: 6010C - Metals (ICF	P) - Total Recoverat	ole							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Iron	12		0.050		mg/L		02/13/14 09:21	02/14/14 04:14	
Manganese .	0.42	•	0.010		mg/L,		02/13/14 09:21	02/14/14 04:14	
General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Chloride	99		2.0		mg/L			02/18/14 12:34	
Nitrate as N	0.050	U*^ <b>V</b> J	0.050		mg/L			02/12/14 22:19	
Sulfate	760		250		mg/L			02/18/14 18:07	5
Total Organic Carbon	3.6		1.0		mg/L			02/13/14 08:18	
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fa
Alkalinity	330		5.0		mg/L			02/19/14 18;11	
Carbon Dioxide, Free	18		5.0		mg/L			02/19/14 18:11	

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98549-1

SDG: KPS110

Client Sample ID: ESL-MW-C1-F(0.2)-0214

Date Collected: 02/11/14 12:55 Date Received: 02/12/14 11:11 Lab Sample ID: 680-98549-4

Matrix: Water

Method: 6010C - Metals (ICP) - I	Dissolved								
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	12		0.050		mg/L		02/13/14 09:21	02/14/14 04:18	1
Manganese, Dissolved	0.42		0.010		mg/L		02/13/14 09:21	02/14/14 04:18	1
General Chemistry - Dissolved									
Analyte	Result	Qualifier	RL.	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	3.6		1.0	LA DALLO A LO ROANNO DE COMO	mg/L			02/13/14 12:52	1

MAR 1 0 2014

Client: Solutia Inc.

Dibromofluoromethane

Toluene-d8 (Surr)

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98549-1

SDG: KPS110

Client Sample ID: 1Q14 LTM Trip Blank #5

Date Collected: 02/11/14 00:00 Date Received: 02/12/14 11:11 Lab Sample ID: 680-98549-5

02/21/14 14:48

02/21/14 14:48

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)											
Analyte	Result	Qualifier	RL	MDL	Unit	Đ	Prepared	Analyzed	Dil Fac		
Benzene	1.0	U	1.0		ug/L			02/21/14 14:48	1		
Chiorobenzene	1.0	U	1.0		ug/L			02/21/14 14:48	1		
1,2-Dichlorobenzene	1,0	U	1.0		ug/L			02/21/14 14:48	1		
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			02/21/14 14:48	1		
1,4-Dichiorobenzene	1.0	U	1.0		ug/L			02/21/14 14:48	1		
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac		
4-Bromofluorobenzene	99		70 - 130					02/21/14 14:48	1		

70 - 130

70 - 130

97

99

MAR 1 0 2014

# **Surrogate Summary**

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98549-1

SDG: KPS110

Prep Type: Total/NA

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water

				Percent Surrog	gate Recovery (Acceptance Limits)
		BFB	DBFM	TOL	
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	(70-130)	
680-98549-1	ESL-MW-A-0214	93	94	89	
680-98549-3	ESL-MW-C1-0214	99	98	100	
680-98549-5	1Q14 LTM Trip Blank #5	99	97	99	
LCS 680-316403/4	Lab Control Sample	97	91	97	
LCS 680-316608/5	Lab Control Sample	112	92	10B	
LCSD 680-316403/5	Lab Control Sample Dup	99	93	101	
LCSD 680-316608/9	Lab Control Sample Dup	99	89	101	
MB 680-316403/8	Method Blank	94	100	88	
MB 680-316608/7	Method Blank	98	97	97	

Surrogate Legend

BFB = 4-Bromofluorobenzene

DBFM = Dibromofluoromethane

TOL = Toluene-d8 (Surr)

MAR 1 0 2014
TestAmerica Savannah

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98549-1

SDG: KPS110

#### Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 680-316403/8

Matrix: Water

Analyte

Benzene

Chlorobenzene

1,2-Dichlorobenzene

1,3-Dichlorobenzene

1,4-Dichlorobenzene

Analysis Batch: 316403

Client Sample ID: Meth	od Blank
Prep Type:	Total/NA

MB MB Result Qualifier RL MDL Unit Analyzed Dil Fac Prepared 1.0 Ü 1.0 02/20/14 12:52 ug/L 1.0 U 1.0 ug/L 02/20/14 12:52 1.0 U 1,0 ug/L 02/20/14 12:52 1.0 U 1.0 ug/L 02/20/14 12:52 02/20/14 12:52 1.0 U 1.0 ug/L

* Section 1	MB	MB			
Surrogate	%Recovery	Qualifier	Limits	Prepared Analyzed	Dil Fac
4-Bromofluorobenzene	94		70 - 130	02/20/14 12:52	1
Dibromofluoromethane	100		70 - 130	02/20/14 12:52	1
Toluene-d8 (Surr)	88		70 - 130	02/20/14 12:52	1

Lab Sample ID: LCS 680-316403/4

Matrix: Water

Analysis Batch: 316403

Client Sample ID: Lab Control Sample Prep Type: Total/NA

-		Spike	LCS	LCS				%Rec.		
	Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits		
	Benzene	 50.0	51.8		ug/L		104	74 - 123	116-6-4-4	
-	Chlorobenzene	50.0	46.7		ug/L		93	79 . 120		
-	1,2-Dichlorobenzene	50,0	46.3		ug/L		93	77 - 124		
-	1,3-Dichlorobenzene	50.0	47.4		ug/L		95	79 - 123		
-	1,4-Dichlorobenzene	50,0	46.5		ug/L		93	76 - 124		
-										

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene	97		70 - 130
Dibromofluoromethane	91		70 - 130
Toluene-d8 (Surr)	97		70 - 130

Lab Sample ID: LCSD 680-316403/5

Matrix: Water

Analysis Batch: 316403

Client Sample ID: Lab Control Sample Dup Prep Type: Total/NA

initially color Dutonic City (Co.											
-		Spike	LCSD	LCSD				%Rec.		RPD	
Analyte		Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Benzene	A	50.0	53.6		ug/L		107	74 - 123	3	30	
Chlorobenzene		50,0	47.9		ug/L		96	79 - 120	2	30	
1,2-Dichlorobenzene		50,0	46,9		ug/L		94	77 - 124	1	30	
1,3-Dichlorobenzene		50.0	48.2		ug/L		96	79 - 123	2	30	
1,4-Dichlorobenzene		50,0	47.4		ug/L		95	76 - 124	2	30	

	LCSD	LCSD	
Surrogate	%Recovery		Limits
4-Bromofluorobenzene	99		70 - 130
Dibro <b>m</b> ofluoromethane	93		70 - 130
Toluene-d8 (Surr)	101		70 - 130

MAR 1 0 2014

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98549-1

SDG: KPS110

#### Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 680-316608/7

Matrix: Water

Analysis Batch: 316608

Client Sample ID: Method Blank
Prep Type: Total/NA

1		MH	MA							
	Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Pac
****	Benzene	1.0	Ū	1.0		ug/L			02/21/14 11:55	1
	Chlorobenzene	1.0	U	1.0		ug/L			02/21/14 11:55	1
	1,2-Dichlorobenzene	1.0	U	1.0		ug/L			02/21/14 11:55	1
1	1,3-Dichlorobenzene	1.0	U	1.0		ug/L			02/21/14 11:55	1
	1,4-Dichlorobenzene	1.0	U	1.0		ug/L			02/21/14 11:55	1
i										

MB MB Surrogate %Recovery Qualifier Limits Prepared Analyzed Dil Fac 4-Bromofluorobenzene 98 70 - 130 02/21/14 11:55 Dibromofluoromethane 97 70 - 130 02/21/14 11:55 Toluene-d8 (Surr) 97 70 - 130 02/21/14 11:55

Lab Sample ID: LCS 680-316608/5

Matrix: Water

Analysis Batch: 316608

Client Sample ID	: Lab Control Sample
	Pren Type: Total/NA

	•	Spike	LCS	LCS		%Rec.	
	Analyte	Added	Result	Qualifier Unit	D %R	ec Limits	
********	Benzene	50.0	53.3	ug/L	1	07 74 - 123	
-	Chlorobenzene	50.0	51.2	ug/L	1	02 79 - 120	
	1,2-Dichlorobenzene .	50.0	55.5	ងg/L	1	11 77 - 124	
	1,3-Dichlorobenzene	50.0	56.6	ug/L	1	13 79 - 123	
-	1,4-Dichtorobenzene	50.0	54.1	ug/L	1	08 76 - 124	

LCS LCS Surrogate %Recovery Qualifier Limits 4-Bromofluorobenzene 70 - 130 112 Dibromofluoromethane 92 70 - 130 Toluene-d8 (Surr) 108 70 - 130

Lab Sample ID: LCSD 680-316608/9

Matrix: Water

Analysis Batch: 316608

Client Sample ID: Lab	Control Sample Dup
	Pron Type: Total/MA

Prep Type: Total/NA

•	Spike	L <b>CS</b> D	LCSD			%Rec.		RPD
Analyte	Added	Result	Qualifier Ur	iit D	%Rec	Limits	RPD	Limit
Benzene .	50,0	50.9	. ug	/L	102	74 - 123	5	30
Chlorobenzene	50.0	46,4	ug	/L	93	79 - 120	10	30
1,2-Dichlorobenzene	50.0	48.3	ug	/L	97	77 - 124	14	30
1,3-Dichlorobenzene	50.0	49.2	ug	/L	98	79 - 123	14	30
1,4-Dichlorobenzene	50.0	48.2	ug	/L	96	76 - 124	12	30

	LCSD	LCSD	
Surrogate	%Recovery		Limits
4-Bromofluorobenzene	99		70 - 130
Dibromofluoromethane	89		70 - 130
Toluene-d8 (Surr)	101		70 - 130

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98549-1

SDG: KPS110

#### Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 680-316882/7	Client Sample ID: Method Blank
Matrix: Water	Prep Type: Total/NA

Analysis Batch: 316882

ì		MB	MB								
STATE OF STREET	Analyte	Result	Qualifier	₽L	MDL	Unit		D	Prepared	Analyzed	Dil Fac
	Ethane	1.1	Ū	1.1	berlate television to be be a beautiful and a	ชg/L	210,000,000			02/24/14 11:09	1
	Ethylene	1.0	υ	1.0		ชg/L				02/24/14 11:09	1
	Methane	0.58	υ	0,58		ug/L				02/24/14 11:09	1
	Methane (TCD)	390	U	390		ug/L				02/24/14 11:09	1

Lab Sample ID: LCS 680-316882/3 Client Sample ID: Lab Control Sample Matrix: Water Prep Type: Total/NA

Analysis Batch: 316882

-		Spike	LCS	LCS				%Rec.	
	Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
	Ethane	288	277		ug/L		96	75 . 125	
	Ethylene	269	271		ug/L		101	75 - 125	
	Methane	154	138		ug/L		89	75 <sub>-</sub> 125	

Lab Sample ID: LCS 680-316882/5 Client Sample ID: Lab Control Sample Matrix: Water Prep Type: Total/NA Analysis Batch: 316882

ŝ.	Anialy Dio Datoin O 1000E								
1		Spike	LCS	LCS				%Rec.	
	Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
***************************************	Methane (TCD)	 1920	2030	*	ug/L		105	75 - 125	 

Lab Sample ID: LCSD 680-316882/4 Client Sample ID: Lab Control Sample Dup Matrix: Water Prep Type: Total/NA Analysis Batch: 316882

	Spike	LCSD	LCSD				%Rec.		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Ethane	288	269		ug/L		93	75 - 125	3	30
Ethylene	269	260		ug/L		97	75 - 125	4	30
Methane	154	134		ug/L		87	75 - 125	3	30

Lab Sample ID: LCSD 680-316882/6 Client Sample ID: Lab Control Sample Dup Matrix: Water Prep Type: Total/NA Analysis Batch: 316882

1	Allalysis Batch. 010002										
of and and		Spike	LCSD	LCSD				%Rec.		RPD	
1	Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Total charles	Methane (TCD)	1920	1860		ug/L	****	97	75 _ 125	8	30	

# Method: 6010C - Metals (ICP)

Lab Sample ID: MB 680-315422/1-A Client Sample ID: Method Blank Prep Type: Total Recoverable Matrix: Water Analysis Batch: 315707 Prep Batch: 315422

	•	MB	MB						-	
-	Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Iron	0,050	U	0.050		mg/L		02/13/14 09:21	02/14/14 03:32	1
	fron, Dissolved	0.050	υ	0.050		mg/L		02/13/14 09:21	02/14/14 03:32	1
-	Manganese	0.010	υ	0.010		mg/L		02/13/14 09:21	02/14/14 03:32	1
1	Manganese, Dissolved	0.010	υ	0.010		mg/L		02/13/14 09:21	02/14/14 03:32	1

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98549-1

Client Sample ID: Method Blank

Prep Type: Total/NA

SDG: KPS110

Method:	6010C -	Metals	(ICP)	(Continued)

Lab Sample ID: LCS 680-315422/2-A Matrix: Water Analysis Batch: 315707					Client	•	Type: Tota	ontrol Sample il Recoverable Batch: 315422
	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	Đ	%Rec	Limits	
Iron	5.00	5.07		mg/L		101	75 - 125	Market Committee
Iron, Dissolved	5.00	5.07		mg/L		101	75 - 125	
Manganese	0.500	0.532		mg/L		106	75 - 125	
Manganese, Dissolved	0.500	0.532		mg/L		106	75 _ 125	

#### Method: 310.1 - Alkalinity

Matrix: Water

Lab Sample ID: MB 680-315783/5

Lab Sample ID: LCS 680-316390/6

Analysis Batch: 315783										
	MB	MB								
Analyte	Result	Qualifier	RL	RL	Unit	{	D	Prepared	Analyzed	Dil Fac
Alkalinity	5.0	Ū	5.0		mg/L		_	Andrew Committee of the	02/13/14 20:09	1
Carbon Dioxide Free	5.0	11	5.0		mo/l				02/13/14 20:09	1

Lab Sample ID: LCS 680-315783/6	Client Sample ID: Lab Control Sample								
Matrix: Water							Prep T	ype: To	tal/NA
Analysis Batch: 315783									
	Spike	, LCS	LCS				%Rec.		
Analyte	Added	Result	Qualifier (	Unit	Ð	%Rec	Limits		
Alkalinity	250	254	r	mg/L		102	80 - 120	,	

Lab Sample ID: LCSD 680-315783/30				Client	зап	ipie iu:	Lab Contro	اد Samp	ie Dup
Matrix: Water							Prep T	ype: To	otal/NA
Analysis Batch: 315783									
	Spike	LCSD	LCSD				%Rec.		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
: Attaliaite	250	226				01	90 100	4.7	20

1	hou.	 	 
	Lab Sample ID: MB 680-316390/5		Client Sample ID: Method Blank
	Matrix: Water		Prep Type: Total/NA
	Analysis Batch: 316390		

	MB	MB							
Analyte	Result	Qualifier	RL	RL	Unit	Đ	Prepared	Analyzed	Dil Fac
Alkalinity	5.0	U	5,0	,	mg/L			02/19/14 15:41	1
Carbon Dioxide, Free	5.0	U	5.0		mg/L			02/19/14 15:41	1

Matrix: Water							Prep 1	Гуре: Total/NA
Analysis Batch: 316390								
	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	Ð	%Rec	Limits	
Alkalinity	250	227		mg/L		91	80 - 120	areason and a second

TestAmerica Savannah

Client Sample ID: Lab Control Sample

MAR 1 0 2014

Client: Solutia Inc. TestAmerica Job ID: 680-98549-1 Project/Site: WGK Long Term Monitoring - 1Q14 SDG: KPS110 Method: 310.1 - Alkalinity (Continued) Lab Sample ID: LCSD 680-316390/32 Client Sample ID: Lab Control Sample Dup Matrix: Water Prep Type: Total/NA Analysis Batch: 316390 Spike LCSD LCSD %Rec. Analyte Added Result Qualifier Unit %Rec Limits Limit Alkalinity 250 219 mg/L 80 - 120 30 Method: 325.2 - Chloride Lab Sample ID: MB 680-316242/15 Client Sample ID: Method Blank Matrix: Water Prep Type: Total/NA Analysis Batch: 316242 мв мв Analyte Result Qualifier MDL Unit RL Prepared Analyzed Dil Fac Chloride 1.0 02/18/14 12:21 10 II mg/L Lab Sample ID: LCS 680-316242/1 Client Sample ID: Lab Control Sample Matrix: Water Prep Type: Total/NA Analysis Batch: 316242 Spike LCS LCS %Rec. Analyte Added Result Qualifier Unit %Rec Limits Chloride 25.0 25.8 mg/L 103 85 - 115 Method: 353.2 - Nitrogen, Nitrate-Nitrite Lab Sample ID: MB 680-315374/13 Client Sample ID: Method Blank Matrix: Water Prep Type: Total/NA Analysis Batch: 315374 MB MB Analyte Result Qualifier RL MDL Unit Prepared Analyzed Dil Fac Nitrate as N 0.050 U ^ 0.050 mg/L 02/12/14 21:37 Lab Sample ID: LCS 680-315374/14 Client Sample ID: Lab Control Sample Matrix: Water Prep Type: Total/NA Analysis Batch: 315374 Spike LCS LCS %Rec. Analyte Added Result Qualifier Unit %Rec Limits Nitrate as N 0.500 0.553 mg/L 90 - 110 Nitrate Nitrite as N 90 - 110 1.00 1.05 mg/L Nitrite as N 0.500 0.495 mg/L 90 - 110 99 Method: 375.4 - Sulfate Lab Sample ID: MB 680-316246/23 Client Sample ID: Method Blank Matrix: Water Prep Type: Total/NA Analysis Batch: 316246 MB MB Analyte Result Qualifier RΙ MDL Unit Prepared Analyzed Dil Fac

TestAmerica Savannah

02/18/14 17:15

5.0

mg/L

5.0 U

Sulfate

Client: Solutia Inc. TestAmerica Job ID: 680-98549-1 Project/Site: WGK Long Term Monitoring - 1Q14 SDG: KPS110 Method: 375.4 - Sulfate (Continued) Lab Sample ID: LCS 680-316246/6 Client Sample ID: Lab Control Sample Matrix: Water Prep Type: Total/NA Analysis Batch: 316246 Spike LCS LCS %Rec. Analyte Added Result Qualifier Unit %Rec Limits Sulfate 20.0 100 19.9 mg/L 75 - 125 Method: 415.1 - DOC Lab Sample ID: MB 680-315513/2-A Client Sample ID: Method Blank Matrix: Water Prep Type: Dissolved Analysis Batch: 315508 мв мв Result Qualifier RL. MDL Unit Prepared Analyzed Dil Fac Dissolved Organic Carbon 1.0 Ü 1.0 02/13/14 09:24 mg/L Lab Sample ID: LCS 680-315513/1-A Client Sample ID: Lab Control Sample Matrix: Water Prep Type: Dissolved Analysis Batch: 315508 Spike LCS LCS %Rec. Analyte Added Result Qualifier Unit %Rec Limits Dissolved Organic Carbon 20.0 20,6 103 80 - 120 mg/L Method: 415.1 - TOC Lab Sample ID: MB 680-315507/25 Client Sample ID: Method Blank Matrix: Water Prep Type: Total/NA Analysis Batch: 315507 MB MB Analyte Result Qualifier MDL Unit Prepared Analyzed Dil Fac Total Organic Carbon 1.0 Ü 02/13/14 04:46 mg/L Lab Sample ID: LCS 680-315507/26 Client Sample ID: Lab Control Sample Matrix: Water Prep Type: Total/NA

LCS LCS

Qualifier

Unit

mg/L

Result

21,0

Spike

Added

20.0

Analysis Batch: 315507

Total Organic Carbon

Analyte

TestAmerica Savannah

%Rec.

Limits

80 - 120

%Rec

105

# **QC Association Summary**

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98549-1

SDG: KPS110

#### GC/MS VOA

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-98549-1	ESL-MW-A-0214	Total/NA	Water	8260B	PA ( Antolitie at PPA) of Advances when mode a consumer and
LCS 680-316403/4	Lab Control Sample	Total/NA	Water	8260B	
LCSD 680-316403/5	Lab Control Sample Dup	Total/NA	Water	8260B	
MB 680-316403/8	Method Blank	Total/NA	Water	82608	

#### Analysis Batch: 316608

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-98549-3	ESL-MW-C1-0214	Total/NA	Water	8260B	
680-98549-5	1Q14 LTM Trip Blank #5	Total/NA	Water	82608	
LCS 680-316608/5	Lab Control Sample	Total/NA	Water	8260B	
LCSD 680-316608/9	Lab Control Sample Dup	Total/NA	Water	82608	
MB 680-316608/7	Method Blank	Total/NA	Water	8260B	

#### GC VOA

#### Analysis Batch: 316882

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-98549-1	ESL-MW-A-0214	Total/NA	Water	RSK-175	
680-98549-3	ESL-MW-C1-0214	Total/NA	Water	RSK-175	
LCS 680-316882/3	Lab Control Sample	Total/NA	Water	RSK-175	
LCS 680-316882/5	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 680-316882/4	Lab Control Sample Dup	' Total/NA	Water	RSK-175	
LCSD 680-316882/6	Lab Control Sample Dup	Total/NA	Water	RSK-175	
MB 680-316882/7	Method Blank	Total/NA	Water	RSK-175	

#### Metals

#### Prep Batch: 315422

	Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method Pr	rep Batch
-	680-98549-1	ESL-MW-A-0214	Total Recoverable	Water	3005A	
-	680-98549-2	ESL-MW-A-F(0.2)-0214	Dissolved	Water	3005A	
	680-98549-3	ESL-MW-C1-0214	Total Recoverable	Water	3005A	
	680-98549-4	ESL-MW-C1-F(0.2)-0214	Dissolved	Water	3005A	
-	LCS 680-315422/2-A	Lab Control Sample	Total Recoverable	Water	3005A	,
	MB 680-315422/1-A	Method Blank	Total Recoverable	Water	3005A	

#### Analysis Batch: 315707

Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batch
680-98549-1	ESL-MW-A-0214	Total Recoverable	Water	6010C	315422
680-98549-2	ESL-MW-A-F(0.2)-0214	Dissolved	Water	6010C	315422
680-98549-3	ESL-MW-C1-0214	Total Recoverable	Water	6010C	315422
680-98549-4	ESL-MW-C1-F(0.2)-0214	Dissolved	Water	6010C	315422
LCS 680-315422/2-A	Lab Control Sample	Total Recoverable	Water	6010C	315422
MB 680-315422/1-A	Method Blank	Total Recoverable	Water	6010C	315422

# **General Chemistry**

#### Analysis Batch: 315374

Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batch
680-98549-1	ESL-MW-A-0214	Total/NA	Water	353.2	

# **QC Association Summary**

Client: Solutia Inc.

TestAmerica Job ID: 680-98549-1 SDG: KPS110

SDG: KPS110				Term Monitoring - 1Q14	Project/Site: WGK Long T
				Continued)	General Chemistry (
				(Continued)	nalysis Batch: 315374 (
Prep Batcl	Method	Matrix	Prep Type	Client Sample ID	Lab Sample ID
,,,,,	353.2	Water	Total/NA	ESL-MW-C1-0214	680-98549-3
	353.2	Water	Total/NA	Lab Control Sample	LCS 680~315374/14
	353.2	Water	Total/NA	Method Blank	MB 680-315374/13
					nalysis Batch: 315507
Prep Batc	Method	Matrix	Prep Type	Client Sample ID	Lab Sample ID
	415.1	Water	Total/NA	ESL-MW-A-0214	680-98549-1
	415.1	Water	Total/NA	ESL-MW-C1-0214	680-98549-3
	415.1	Water	Total/NA	Lab Control Sample	LCS 680-315507/26
	415.1	Water	Total/NA	Method Blank	MB 680-315507/25
					nalysis Batch: 315508
Prep Batc	Method	Matrix	Prep Type	Client Sample ID	Lab Sample ID
	415.1	Water	Dissolved	ESL-MW-A-F(0.2)-0214	680-98549-2
	415.1	Water	Dissolved	ESL-MW-C1-F(0.2)-0214	680-98549-4
31551	415.1	Water	Dissolved		
31551	415.1	Water	Dissolved	Lab Control Sample Method Blank	LCS 680-315513/1-A MB 680-315513/2-A
					iltration Batch: 315513
Prep Bato	Method	Matrix	Drop Type		
riep batt	FILTRATION	Water	Prep Type Dissolved	Client Sample ID	Lab Sample ID
	FILTRATION	Water	Dissolved	Lab Control Sample  Method Blank	LCS 680-315513/1-A MB 680-315513/2-A
Prep Batc	Method	Matrix	Prep Type	Client Sample ID	nalysis Batch: 315783 Lab Sample ID
	310.1	Water	Total/NA	ESL-MW-A-0214	680-98549-1
	310.1	Water	Total/NA	Lab Control Sample	LCS 680-315783/6
	310.1	Water	Total/NA	Lab Control Sample Dup	LCSD 680-315783/30
	310.1	Water	Total/NA	Method Blank	MB 680-315783/5
					nalysis Batch: 316242
Prep Bato	Method	Matrix	Prep Type	Client Sample ID	Lab Sample ID
	325.2	Water	Total/NA	ESL-MW-A-0214	680-98549-1
	325.2	Water	Total/NA	ESL-MW-C1-0214	680-98549-3
	325.2	Water	Total/NA	Lab Control Sample	LCS 680-316242/1
	325.2	Water	Total/NA	Method Blank	MB 680-316242/15
					nalysis Batch: 316246
Prep Bate	Method	Matrix	Prep Type	Client Sample ID	Lab Sample ID
	375.4	Water	Tolal/NA	ESL-MW-A-0214	680-98549-1
	375.4	Water	Total/NA	ESL-MW-C1-0214	680-98549-3
	375.4	Water	Total/NA	Lab Control Sample	LCS 680-316246/6
	375.4	Water	Total/NA	Method Blank	MB 680-316246/23
					nalysis Batch: 316390
Prep Bate	Method	Matrix	Prep Type	Client Sample ID	Lab Sample ID
	310.1	Water	Total/NA	ESL-MW-C1-0214	
				·	
			~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		Lab Sample ID 680-98549-3 LCS 680-316390/6 LCSD 680-316390/32 MB 680-316390/5

#### Lab Chronicle

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680~98549-1

SDG: KPS110

Client Sample ID: ESL-MW-A-0214

Date Collected: 02/11/14 15:00 Date Received: 02/12/14 11:11 Lab Sample ID: 680-98549-1

Matrix: Water

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	316403	02/20/14 19:01	MMT	TAL SAV
Total/NA	Analysis	RSK-175		1	316882	02/24/14 13:04	TAR	TAL SAV
Total Recoverable	Prep	3005A			315422	02/13/14 09:21	BJB	TAL SAV
Total Recoverable	Analysis	6010C		1	315707	02/14/14 04:04	BCB	TAL SAV
Total/NA	Analysis	353,2		1	315374	02/12/14 22:17	GRX	TAL SAV
Totai/NA	Analysis	415.1		1	315507	02/13/14 08:01	CMP	TAL SAV
Total/NA	Analysis	310.1		1	315783	02/13/14 21:47	LBH	TAL SAV
Total/NA	Analysis	325.2		2	316242	02/18/14 12:34	JME	TAL SAV
Total/NA	Analysis	375.4		20	316246	02/18/14 18:07	JME	TAL SAV

Client Sample ID: ESL-MW-A-F(0.2)-0214

Date Collected: 02/11/14 15:00

Date Received: 02/12/14 11:11

Lab Sample ID: 680-98549-2

Matrix: Water

Batch Batch Dilution Batch Prepared Prep Type Method Type Run Factor Number or Analyzed Analyst Lab Dissolved Prep 3005A 315422 02/13/14 09:21 BJB TAL SAV Dissolved Analysis 6010C 315707 02/14/14 04:09 BCB TAL SAV Dissolved Analysis 415.1 1 02/13/14 12:36 CMP TAL \$AV 315508

Client Sample ID: ESL-MW-C1-0214

Date Collected: 02/11/14 12:55

Date Received: 02/12/14 11:11

Lab Sample ID: 680-98549-3

Matrix: Water

	Batch	Batch		Dilution	Batch	Prepared		
Ргер Туре	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	316608	02/21/14 15:45	MMT	TAL SAV
Total/NA	Analysis	RSK-175		1	316882	02/24/14 13:17	TAR	TAL SAV
Total Recoverable	Prep	3005A			315422	02/13/14 09:21	BJB	TAL SAV
Total Recoverable	Analysis	6010C		1	315707	02/14/14 04:14	BCB	TAL SAV
Total/NA	Analysis	353.2		. 1	315374	02/12/14 22:19	GRX	TAL SAV
Totai/NA	Analysis	415.1		1	315507	02/13/14 08:18	CMP	TAL SAV
Total/NA	Analysis	325.2		2	316242	02/18/14 12:34	JME	TAL SAV
Total/NA	Analysis	375.4		50	316246	02/18/14 18:07	JME	TAL SAV
Total/NA	Analysis	310.1		1	316390	02/19/14 18:11	LBH	TAL SAV

Client Sample ID: ESL-MW-C1-F(0.2)-0214

Date Collected: 02/11/14 12:55 Date Received: 02/12/14 11:11 Lab Sample ID: 680-98549-4

Matrix: Water

***	Batch	Batch		Dilution	Batch	Prepared		
Ргер Туре	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			315422	02/13/14 09:21	BJB	TAL SAV
Dissolved	Analysis	6010C		1	315707	02/14/14 04:18	BCB	TAL SAV

TestAmerica Savannah

MAR 1 0 2014

#### Lab Chronicle

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98549-1

SDG: KPS110

Client Sample ID: ESL-MW-C1-F(0.2)-0214

Client Sample ID: 1Q14 LTM Trip Blank #5

Date Collected: 02/11/14 12:55

Lab Sample ID: 680-98549-4

Matrix: Water

Date Received: 02/12/14 11:11

	Batch	Batch		Dilution	Batch	Prepared		
Ргер Туре	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Dissolved	Analysis	415.1		1	315508	02/13/14 12:52	CMP	TAL SAV

Lab Sample ID: 680-98549-5

Date Collected: 02/11/14 00:00

Matrix: Water

Date Received: 02/12/14 11:11

	Batch	Batch		Dilution	Batch	Prepared		
Ргер Туре	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	316608	02/21/14 14:48	MMT	TAL SAV

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

#### Savannah

5102 LaRoche Avenue Savannah, GA 31404

# Chain of Custody Record



phone 912.354.7858 fax 912.352.0165																					7	estAmerica Labora	tories, Inc.
Client Contact	Pro	ject Ma	anager: Bol	Billman			Sit	te Co	ontac	t: M	icha	el Co	rbett		Design		100	the second			C	OC No:	
URS Corporation	Tel	Fax: (:	314) 743-41				La	b C	ontae	t: M	iche	le Ke	rsey		Carrie	er:	F	d E	ĸ				OCs .
1001 Highlands Plaza Drive West, Suite 300			Analysis T	urnaround									1								$\top$		_
St. Louis, MO 63110		alenda	r(C)orWo				1				75.4		1		-		ll					21563600.	0000/
(314) 429-0100 Phone		Τ.	AT if dif <del>ferent</del> f	from Below	Stando	rd				-	ž ,	0									L		
(314) 429-0462 FAX			2	wccks			ŀ				9 3	2		1 2 1		-	H				S	DG No.	
Project Name: 1Q14 LTM GW Sampling	7		1	week				1	8		Suff	2		8		1		-	1				
Site: Solutia WG Krummrich Facility	7		:	2 days			, 0	=	8	2	5.2/	2 6		d III		-							
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							d Sa	by 8	5	2	de b	2 4	1	53	<del>2</del>						Г		
Sample Identification		mple Date	Sample Time	Sample Type	Matrix	# of Comb	Filigre	VOCs by 8260B	Total Fe/Mn by 6010C	Alk/CO2 by 310.1	Chforlide by 325.2/Sulfate by 375.4	Dissolved Cases by Row 173 Nitrate by 353.2	TOC by 415.1	Dissolved Re/Mn by 6010C	DOC by 415.1							Sample Specifi	c Notes:
ESL-MW-A-0214 🖊	2/	11/14	1500	· G	Water	14		3	1	1	1	3 2	3								I	~~~~	
ESL-MW-A-F(0.2)-0214		Ľ	1500	G	Water	2	х			$\perp$				1	1	_							
ESL-MW-CI-0214		<u> </u>	1255	G	Water	14		3	1	1	1	3 2	3			-							
ESL-MW-C1-F(0.2)-0214	\	V	1255	G	Water	2	х			_		_	1_	1	1				_		$\perp$		
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1Q14 LTM Trip Blank # 5	21	nhá			Water	2		2															
Preservation Used: I=Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=Na	OH; 6	= Othe	r		-			2		1	1	2 3,	1 3	4									
Possible Hazard Identification			·····					Sar	nple	Dis	posa	₃J ( Å	fee	may .	be as	sess	ed if	samp	les a	re ret	aine	ed longer than 1 mo	nth)
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Special Instructions/QC Requirements & Comments:												<u>~</u>											2.2
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# Login Sample Receipt Checklist

Client: Solutia Inc.

Job Number: 680-98549-1

SDG Number: KPS110

List Source: TestAmerica Savannah

Login Number: 98549 List Number: 1

Creator: Banda, Christy S

oreacor. Danaa, orasty o	
Question	Answer Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>N/A</td>	N/A
The cooler's custody seal, if present, is intact.	True
Sample custody seals, if present, are intact.	True
The cooler or samples do not appear to have been compromised or tampered with.	True
Samples were received on ice.	True
Cooler Temperature is acceptable.	True
Cooler Temperature is recorded.	True
COC is present.	True
COC is filled out in ink and legible.	True
COC is filled out with all pertinent information.	True
Is the Field Sampler's name present on COC?	True
There are no discrepancies between the containers received and the COC.	True
Samples are received within Holding Time.	True
Sample containers have legible labels.	True .
Containers are not broken or leaking.	True
Sample collection date/times are provided.	True
Appropriate sample containers are used.	True
Sample bottles are completely filled.	True
Sample Preservation Verified.	True
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True
Multiphasic samples are not present.	True
Samples do not require splitting or compositing.	True
Residual Chlorine Checked.	N/A

MAR 1 0 2014

# **Certification Summary**

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98549-1

SDG: KPS110

#### Laboratory: TestAmerica Savannah

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
	AFCEE		SAVLAB	
A2LA	DoD ELAP		399.01	02-28-15
A2LA	ISO/IEC 17025		399.01	02-28-15
Alabama	State Program	4	41450	06-30-14
Arkansas DEO	State Program	6	88-0692	01-31-15
California	NELAP	9	3217CA	07-31-14
Colorado	State Program	8	N/A	12-31-14
Connecticut	State Program	1	PH-0161	03-31-15
Florida	NELAP	4	E87052	06-30-14
GA Dept. of Agriculture	State Program	4	N/A	06-30-14
Georgia	State Program	4	N/A	06-30-14
Georgia	State Program	4	803	06-30-14
Guam	State Program	9	09-005r	04-17-14
Hawaii	State Program	9	N/A	06-30-14
Illinois	NELAP	5	200022	11-30-14
ndiana	State Program	5	N/A	06-30-14
owa	State Program	7	353	07-01-15
Kentucky (DW)	State Program	4	90084	12-31-14
Kentucky (UST)	State Program	4	18	06-30-14
Louisiana	NELAP	6	LA100015	12-31-14
Maine	State Program	1	GA00006	08-16-14
Maryland	State Program	3	250	12-31-14
Massachusetts *	State Program	1	M-GA006	06-30-14
Michigan	State Program	5	9925	06-30-14
Mississippi	State Program	4	N/A	06-30-14
Montana	State Program	8	CERT0081	01-01-15
Nebraska	State Program	7	TestAmerica-Savannah	06-30-14
New Jersey	NELAP	2	GA769	06-30-14
New Mexico	State Program	6	N/A	06-30-14
New York	NELAP	2	10842	03-31-14
North Carolina DENR	State Program	4	269	12-31-14
North Carolina DHHS	State Program	4	13701	07-31-14
Oklahoma	State Program	6	9984	08-31-14
Pennsylvania	NELAP	3	68-00474	06-30-14
Puerto Rico	State Program	2	GA00006	12-31-14
South Carolina	State Program	4	98001	06-30-14
Tennessee	State Program	4	TN02961	06-30-14
Texas	NELAP	6	T104704185-08-TX	11-30-14
JSDA	Federal		SAV 3-04	04-07-14
Virginia	NELAP	3	460161	06-14-14
Washington	State Program	10	C1794	06-10-14
West Virginia DEP	State Program	3	94	06-30-14
West Virginia DHHR	State Program	3	9950C	12-31-13 *
Wisconsin	State Program	5	999819810	08-31-14
Wyoming	State Program	8	BTMS-L	06-30-14

<sup>\*</sup> Expired certification is currently pending renewal and is considered valid.

# Solutia Krummrich Data Review WGK LTM 1Q14

Laboratory SDG: KPS111 Rev. 3
Data Reviewer: Melissa Mansker
Peer Reviewer: Elizabeth Kunkel

Date Reviewed: 3/13/2014

Guidance: USEPA National Functional Guidelines for Superfund Organic Methods Data Review 2008. USEPA National Functional Guidelines for Superfund

**Inorganic Data Review 2010** 

Work Plan: Revised Long-Term Monitoring Program (LTMP) Work Plan (Solutia

2009)

Sample Identification									
CPA-MW-2D-0214	CPA-MW-2D-F(0.2)-0214								
CPA-MW-2D-0214-AD	ESL-MW-D1-0214								
ESL-MW-D1-F(0.2)-0214	1Q14 LTM Trip Blank #6								

#### 1.0 Data Package Completeness

Were all items delivered as specified in the QAPP and COC as appropriate? Yes

#### 2.0 Laboratory Case Narrative \ Cooler Receipt Form

Were problems noted in the laboratory case narrative or cooler receipt form?

Yes, the laboratory case narrative indicated that samples CPA-MW-2D-F(0.2)-0214 and ESL-MW-D1-F(0.2)-0214 were field filtered, however were laboratory preserved and analyzed for dissolved organic carbon approximately two days outside the two hour hold time for preservation. LCS/LCSD recoveries were outside evaluation criteria for 4-chloroaniline. Surrogates were diluted out and not recovered in SVOC field duplicate pair, CPA-MW-2D-0214/CPA-MW-2D-0214-AD. Nitrate MS/MSD recoveries were outside evaluation criteria for sample CPA-MW-2D-0214. Samples were diluted due to high levels of target analytes. These issues are addressed further in the appropriate sections below.

The cooler receipt form indicated that the laboratory report was revised and re-issued on March 13, 2014 to correct a laboratory transcription error for sample ID ESL-MW-D1-0214, and to flag samples CPA-MW-2D-F(0.2)-0214 and ESL-MW-D1-F(0.2)-0214 outside holding time criteria for dissolved organic carbon analysis.

#### 3.0 Holding Times

Were samples extracted/analyzed within applicable limits?

No, samples CPA-MW-2D-F(0.2)-0214 and ESL-MW-D1-F(0.2)-0214 were field filtered, however were laboratory preserved and analyzed for dissolved organic carbon approximately two days outside the two hour hold time for preservation. Analytical data

that required qualification based on holding time criteria are included in the table below.

Sample ID	Parameter	Analyte	Qualification
CPA-MW-2D-F(0.2)-0214	General chemistry	Dissolved organic carbon	J
ESL-MW-D1-F(0.2)-0214	General chemistry	Dissolved organic carbon	J

#### 4.0 Blank Contamination

Were any analytes detected in the Method Blanks, Field Blanks or Trip Blanks?

No

# 5.0 Laboratory Control Sample

Were LCS recoveries within evaluation criteria?

No

LCS/LCSD ID	Parameter	Analyte	LCS/LCSD Recovery	RPD	LCS/LCSD/ RPD Criteria
LCS/LCSD 680- 315638/7/8-A	SVOCs	4-Chloroaniline	14/12	14	42-130/50

The compound 4-chloroaniline is not reported for the associated samples.

#### 6.0 Surrogate Recoveries

Were surrogate recoveries within evaluation criteria?

Surrogates were diluted out and not recovered in SVOC analysis of field duplicate pair CPA-MW-2D-0214/CPA-MW-2D-0214-AD. No qualification of data is required.

#### 7.0 Matrix Spike and Matrix Spike Duplicate Recoveries

Were MS/MSD samples collected as part of this SDG?

Yes, although not requested, sample CPA-MW-2D-0214 was spiked and analyzed for chloride.

Were MS/MSD recoveries within evaluation criteria?

No

MS/MSD ID	Parameter	Analyte	MS/MSD Recovery	RPD	MS/MSD/ RPD Criteria
CPA-MW-2D-0214	General chemistry	Chloride	80/81	0	85-115/30

Analytical data that required qualification based on MS/MSD data are included in the table below.

Sample ID	Parameter	Analyte	Qualification
CPA-MW-2D-0214	General chemistry	Chloride	J

#### 8.0 Internal Standard (IS) Recoveries

Were internal standard area recoveries within evaluation criteria?

Yes

# 9.0 Laboratory Duplicate Results

Were laboratory duplicate samples collected as part of this SDG?

No

# 10.0 Field Duplicate Results

Were field duplicate samples collected as part of this SDG?

Yes

Field ID	Field Duplicate ID
CPA-MW-2D-0214	CPA-MW-2D-0214-AD

Were field duplicates within evaluation criteria?

Yes

# 10.0 Sample Dilutions

For samples that were diluted and nondetect, were undiluted results also reported?

Not applicable; analytes were detected in samples that were diluted.

#### 11.0 Additional Qualifications

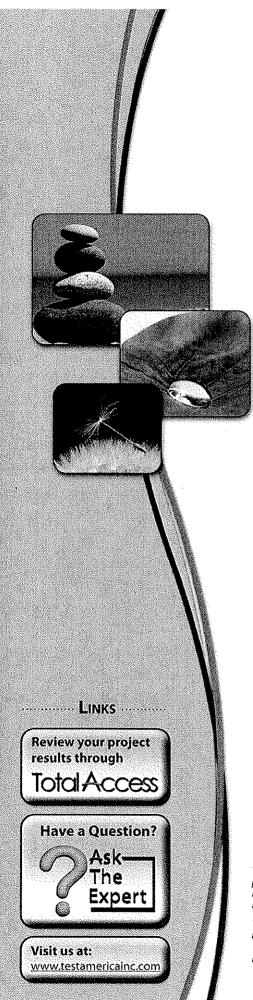
Were additional qualifications applied?

No

# SDG KPS111

Results of Samples from Monitoring Well:

CPA-MW-2D ESL-MW-D1



# **TestAmerica**

THE LEADER IN ENVIRONMENTAL TESTING

# **ANALYTICAL REPORT**

TestAmerica Laboratories, Inc. TestAmerica Savannah 5102 LaRoche Avenue Savannah, GA 31404 Tel: (912)354-7858

TestAmerica Job ID: 680-98575-1

TestAmerica Sample Delivery Group: KPS111

Client Project/Site: WGK Long Term Monitoring - 1Q14

Revision: 3

For:

Solutia Inc. 575 Maryville Centre Dr. Saint Louis, Missouri 63141

Attn: Mr. Jerry Rinaldi

Michael Kusy

Authorized for release by: 3/13/2014 3:37:54 PM

Michele Kersey, Project Manager I (912)354-7858 michele.kersey@testamericainc.com

Reviewed on MAR 13 2014 M

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

# SDG: KPS111

# **Table of Contents**

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Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98575-1

SDG: KPS111

Job ID: 680-98575-1

Laboratory: TestAmerica Savannah

Narrative

#### CASE NARRATIVE

Client: Solutia Inc.

Project: WGK Long Term Monitoring - 1Q14

Report Number: 680-98575-1 Revision 3

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In the event of interference or analytes present at high concentrations, samples may be diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

#### RECEIPT

The samples were received on 2/13/2014 9:40 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.0° C.

#### Except:

Method(s) 415.1: Samples submitted for dissolved organic carbon (DOC) require filtration and preservation in the field within 2 hours of collection. The following sample(s) were filtered in the field but preserved in the laboratory outside the method-defined 2-hour holding time: CPA-MW-2D-F(0.2)-0214 (680-98575-2), ESL-MW-D1-F(0.2)-0214 (680-98575-5).

NOTES: Report revised to correct sample id ESL-MW-D1-0214 (680-98575-4). Added "H" flags to out of hold data for Dissolved Organic Carbon method 415.1 for the following samples CPA-MW-2D-F(0.2)-0214 (680-98575-2), ESL-MW-D1-F(0.2)-0214 (680-98575-5).

#### **VOLATILE ORGANIC COMPOUNDS (GC-MS)**

Samples CPA-MW-2D-0214 (680-98575-1), CPA-MW-2D-0214-AD (680-98575-3), ESL-MW-D1-0214 (680-98575-4) and 1Q14 LTM Trip Blank #6 (680-98575-6) were analyzed for Volatile Organic Compounds (GC-MS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 02/20/2014 and 02/21/2014.

Samples CPA-MW-2D-0214 (680-98575-1)[250X], CPA-MW-2D-0214-AD (680-98575-3)[250X] and ESL-MW-D1-2014 (680-98575-4)[25X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No difficulties were encountered during the volatiles analysis.

All quality control parameters were within the acceptance limits.

#### SEMIVOLATILE ORGANIC COMPOUNDS (AQUEOUS)

Samples CPA-MW-2D-0214 (680-98575-1) and CPA-MW-2D-0214-AD (680-98575-3) were analyzed for Semivolatile Organic Compounds (Aqueous) in accordance with EPA SW-846 Method 8270D. The samples were prepared on 02/14/2014 and analyzed on 02/17/2014.

The following analyte(s) recovered outside control limits for the LCS/LCSD associated with batch 315638: 4-Chloroanilline, 3-Nitroanilline, Aniline and N-Nitrosodiphenylamine. This is not indicative of a systematic control problem because these were random marginal exceedances. Per the associated SOP we are allowed four analytes to be out in the full list spike; results have been qualified and reported.

The laboratory control sample and the laboratory control sample duplicate (LCS/LCSD) for batch 315638 recovered outside control limits for the following analyte(s): Atrazine. Atrazine has been identified as a poor performing analyte when analyzed using this method; therefore, re-extraction/re-analysis was not performed. Batch precision also exceeded control limits for these analyte(s). These results

MAR 1 3 2014

### **Case Narrative**

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98575-1

SDG: KPS111

### Job ID: 680-98575-1 (Continued)

Laboratory: TestAmerica Savannah (Continued)

have been reported and qualified.

Samples CPA-MW-2D-0214 (680-98575-1)[10X] and CPA-MW-2D-0214-AD (680-98575-3)[10X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No other difficulties were encountered during the semivolatiles analysis.

All other quality control parameters were within the acceptance limits.

#### DISSOLVED GASES

Samples CPA-MW-2D-0214 (680-98575-1) and ESL-MW-D1-0214 (680-98575-4) were analyzed for dissolved gases in accordance with RSK-175. The samples were analyzed on 02/25/2014.

No difficulties were encountered during the dissolved gases analysis.

All quality control parameters were within the acceptance limits.

#### METALS (ICP)

Samples CPA-MW-2D-F(0.2)-0214 (680-98575-2) and ESL-MW-D1-F(0.2)-0214 (680-98575-5) were analyzed for Metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared on 02/13/2014 and analyzed on 02/17/2014.

No difficulties were encountered during the metals analysis.

All quality control parameters were within the acceptance limits.

#### METALS (ICP)

Samples CPA-MW-2D-0214 (680-98575-1) and ESL-MW-D1-0214 (680-98575-4) were analyzed for Metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared on 02/13/2014 and analyzed on 02/17/2014.

No difficulties were encountered during the metals analysis.

All quality control parameters were within the acceptance limits.

#### ALKALINITY

Samples CPA-MW-2D-0214 (680-98575-1) and ESL-MW-D1-0214 (680-98575-4) were analyzed for alkalinity in accordance with EPA Method 310.1. The samples were analyzed on 02/23/2014.

No difficulties were encountered during the alkalinity analysis.

All quality control parameters were within the acceptance limits.

#### CHLORIDE

Samples CPA-MW-2D-0214 (680-98575-1) and ESL-MW-D1-0214 (680-98575-4) were analyzed for Chloride in accordance with EPA Method 325.2. The samples were analyzed on 02/18/2014.

Chloride exceeded the recovery criteria low for the MS & MSD of sample CPA-MW-2D-0214 (680-98575-1) in batch 680-316243.

Refer to the QC report for details.

Samples CPA-MW-2D-0214 (680-98575-1)[2X] and ESL-MW-D1-0214 (680-98575-4)[5X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No other difficulties were encountered during the chloride analysis.

All other quality control parameters were within the acceptance limits.

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#### **Case Narrative**

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98575-1 SDG: KPS111

KPS111

Job ID: 680-98575-1 (Continued)

Laboratory: TestAmerica Savannah (Continued)

### NITRATE-NITRITE AS NITROGEN

Samples CPA-MW-2D-0214 (680-98575-1) and ESL-MW-D1-0214 (680-98575-4) were analyzed for nitrate-nitrite as nitrogen in accordance with EPA Method 353.2. The samples were analyzed on 02/13/2014.

The matrix spike / matrix spike duplicate (MS/MSD) recoveries for batch 316243 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

No other difficulties were encountered during the nitrate-nitrite analysis.

All other quality control parameters were within the acceptance limits.

#### SULFATE

Samples CPA-MW-2D-0214 (680-98575-1) and ESL-MW-D1-0214 (680-98575-4) were analyzed for sulfate in accordance with EPA Method 375.4. The samples were analyzed on 02/18/2014.

Samples CPA-MW-2D-0214 (680-98575-1)[2X] and ESL-MW-D1-0214 (680-98575-4)[20X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No difficulties were encountered during the sulfate analysis.

All quality control parameters were within the acceptance limits.

#### **TOTAL ORGANIC CARBON**

Samples CPA-MW-2D-0214 (680-98575-1) and ESL-MW-D1-0214 (680-98575-4) were analyzed for total organic carbon in accordance with EPA Method 415.1. The samples were analyzed on 02/20/2014.

No difficulties were encountered during the TOC analysis.

All quality control parameters were within the acceptance limits.

### DISSOLVED ORGANIC CARBON (DOC)

Samples CPA-MW-2D-F(0.2)-0214 (680-98575-2) and ESL-MW-D1-F(0.2)-0214 (680-98575-5) were analyzed for Dissolved Organic Carbon (DOC) in accordance with EPA Method 415.1. The samples were analyzed on 02/14/2014.

No difficulties were encountered during the DOC analysis.

All quality control parameters were within the acceptance limits.

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TestAmerica Savannah

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### **Sample Summary**

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98575-1

SDG: KPS111

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-98575-1	CPA-MW-2D-0214	Water	02/12/14 15:10	02/13/14 09:40
680-98575-2	CPA-MW-2D-F(0.2)-0214*	Water	02/12/14 15:10	02/13/14 09:40
680-98575-3	CPA-MW-2D-0214-AD	Water	02/12/14 15:10	02/13/14 09:40
680-98575-4	ESL-MW-D1-0214 /	Water	02/12/14 11:05	02/13/14 09:40
680-98575-5	ESL-MW-D1-F(0.2)-0214	Water	02/12/14 11:05	02/13/14 09:40
680-98575-6	1Q14 LTM Trip Blank #6 🚧	Water	02/12/14 00:00	02/13/14 09:40

**4.3** 





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### **Method Summary**

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98575-1

SDG:	<b>KPS111</b>

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL SAV
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	TAL SAV
RSK-175	Dissolved Gases (GC)	RSK	TAL SAV
6010C	Metals (ICP)	SW846	TAL SAV
310.1	Alkalinity	MCAWW	TAL SAV
325.2	Chloride	MCAWW	TAL SAV
353.2	Nitrogen, Nitrate-Nitrite	MCAWW	TAL SAV
375.4	Sulfate	MCAWW	TAL SAV
415.1	тос	MCAWW	TAL SAV
415.1	DOC	MCAWW	TAL SAV

#### Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

RSK = Sample Prep And Calculations For Dissolved Gas Analysis In Water Samples Using A GC Headspace Equilibration Technique, RSKSOP-175,

Rev. 0, 8/11/94, USEPA Research Lab

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

#### Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

MAR 1 3 2014

### **Definitions/Glossary**

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98575-1

SDG: KPS111

### Qualifiers

#### GC/MS VOA

Qualifier

Qualifier Description

Indicates the analyte was analyzed for but not detected.

#### GC/MS Semi VOA

Qualifier Ū

Qualifier Description Indicates the analyte was analyzed for but not detected.

D

Surrogate or matrix spike recoveries were not obtained because the extract was diluted for analysis; also compounds analyzed at a

dilution may be flagged with a D.

LCS or LCSD exceeds the control limits

Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

#### GC VOA

Qualifier

Qualifier Description

Indicates the analyte was analyzed for but not detected.

#### Metals

Qualifier

Qualifier Description

Indicates the analyte was analyzed for but not detected.

### **General Chemistry**

Qualifier Ű

Qualifier Description

Indicates the analyte was analyzed for but not detected. F1 MS and/or MSD Recovery exceeds the control limits

н

Sample was prepped or analyzed beyond the specified holding time

#### Glossary

Abbreviation

These commonly used abbreviations may or may not be present in this report.

%R

Listed under the "D" column to designate that the result is reported on a dry weight basis Percent Recovery

CNF

Contains no Free Liquid

DER

Duplicate error ratio (normalized absolute difference)

Dil Fac

Dilution Factor

DL, RA, RE, IN

Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample

DLC MDA Decision level concentration Minimum detectable activity Estimated Detection Limit

EOL MOC MDL

Minimum detectable concentration Method Detection Limit

ML

Minimum Level (Dioxin)

NC

Not Calculated

ND

Not detected at the reporting limit (or MDL or EDL if shown)

POL

Practical Quantitation Limit

QC

**Quality Control** 

RER RL

Relative error ratio Reporting Limit or Requested Limit (Radiochemistry)

RPD

Relative Percent Difference, a measure of the relative difference between two points

TEF

Toxicity Equivalent Factor (Dioxin)

TEQ Toxicity Equivalent Quotient (Dioxin)

TestAmerica Savannah

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### **Detection Summary**

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98575-1

Lab Sample ID: 680-98575-1

Lab Sample ID: 680-98575-2

Lab Sample ID: 680-98575-3

SDG: KPS111

### Client Sample ID: CPA-MW-2D-0214

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	960		250		ug/L	250		8260B	Total/NA
Chlorobenzene	26000		250		ยg/L	250		8260B	Total/NA
1,3-Dichlorobenzene	370		250		ขg/L	250		8260B	Total/NA
1,4-Dichlorobenzene	8600		250		ug/L	250		8260B	Total/NA
Methane	24		0.58		ug/L	1		RSK-175	Total/NA
fron	10		0.050		mg/L	1		6010C	Total
									Recoverable
Manganese	0,42		0.010		mg/L	1		6010C	Total
									Recoverable
Chloride	59		2.0		mg/L	2		325.2	Total/NA
Sulfate	56		10		mg/L	2		375.4	Total/NA
Total Organic Carbon	7.9		1.0		mg/L	1		415.1	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Alkalinity	440	*************	5.0		mg/L	1		310.1	Total/NA
Carbon Dioxide, Free	29		5.0		mg/L	1		310.1	Total/NA

### Client Sample ID: CPA-MW-2D-F(0.2)-0214

Analyte	Result Quali	fier RL	MDL Unit	Dil Fac	D Method	Prep Type
Iron, Dissolved	8.4	0,050	mg/L	. 1	6010C	Dissolved
Manganese, Dissolved	0.42	0.010	mg/L	. 1	6010C	Dissolved
Dissolved Organic Carbon	7.3 Н 🕽	1.0	mg/L	. 1	415.1	Dissolved

### Client Sample ID: CPA-MW-2D-0214-AD

Analyte	Result	Qualifier	RL	MOL	Unit	Dil Fac	D	Method	Ргер Туре
Benzene	1000	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	250		ug/L	250	_	8260B	Total/NA
Chlorobenzene	26000		250		ug/L	250		8260B	Total/NA
1,3-Dichlorobenzene	420		250		ug/L	250		8260B	Total/NA
1,4-Dichlorobenzene	8400		250		ug/L	250		8260B	Total/NA

### Client Sample ID: ESL MW D1 0214

Client Sample ID: ESL-M\	N-D1-0214			A 5 - A		Lab	Sample ID	: 680-98575-4
Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac D	Method	Prep Type
Benzene	62		25		ug/L	25	8260B	Total/NA
Chlorobenzene	2500		25		ug/L	25	8260B	Total/NA
1,4-Dichlorobenzene	60		25		ug/L	25	8260B	Total/NA
Methane	18		0.58		ug/L	1	RSK-175	Total/NA
Iron	16		0.050		mg/L	1	6010C	Total
								Recoverable
Manganese	0.41		0.010		mg/L	1	6010C	Total
								Recoverable
Chloride	120		5.0		mg/L	5	325.2	Total/NA
Sulfate	560		100		mg/L	20	375.4	Total/NA
Total Organic Carbon	3,5		1.0		mg/L	1	415.1	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac D	Method	Ргер Туре
Alkalinity	370	**************************************	5.0		mg/L	1	310.1	Total/NA
Carbon Dioxide, Free	31		5,0		mg/L	1	310.1	Total/NA

### Client Sample ID: ESL-MW-D1-F(0.2)-0214

Lab Sample ID: 680-98575-5

This Detection Summary does not include radiochemical test results.

### **Detection Summary**

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98575-1

Lab Sample ID: 680-98575-5

SDG: KPS111

Client Sample ID: ESL-MW-D1-F(0.2)-0214 (Continued)

•										
	Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
į	Iron, Dissolved	16	*	0.050		mg/L	1		6010C	Dissolved
1	Manganese, Dissolved	0.40	_	0.010		mg/L	1		6010C	Dissolved
i	Dissolved Organic Carbon	3.5	нJ	1.0		mg/L	1		415.1	Dissolved

Client Sample ID: 1Q14 LTM Trip Blank #6 Lab Sample ID: 680-98575-6

No Detections.

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TestAmerica Savannah

This Detection Summary does not include radiochemical test results.

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98575-1

SDG: KPS111

Client Sample ID: CPA-MW-2D-0214 Lab Sample ID: 680-98575-1

Date Collected: 02/12/14 15:10 Date Received: 02/13/14 09:40 Matrix: Water

......

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Benzene	960		250		ug/L	***************************************	~	02/20/14 19:59	25
Chlorobenzene	26000		250		ug/L			02/20/14 19:59	250
1,2-Dichlorobenzene	250	U	250		ug/L			02/20/14 19:59	250
1,3-Dichlorobenzene	370		250		ug/L			02/20/14 19:59	250
1,4-Dichlorobenzene	8600		250		ug/L			02/20/14 19:59	250
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
4-Bromofluorobenzene	95		70 - 130					02/20/14 19:59	250
Dibromofluoromethane	96		70 - 130					02/20/14 19:59	250
Toluene-d8 (Surr)	92		70 - 130					02/20/14 19:59	250
Method: 8270D - Semivolatile	•	•	6)						
Analyte		Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fac
2-Chiorophenol	110	U	110		ug/L		02/14/14 16:00	02/17/14 14:56	10
1,2,4-Trichloroberizene	110	U	110		ug/L		02/14/14 16:00	02/17/14 14:56	10
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
2-Fluorobiphenyl		D	38 - 130				02/14/14 16:00	02/17/14 14:56	10
2-Fluorophenol	0	D	25 - 130				02/14/14 16:00	02/17/14 14:56	10
Nitrobenzene-d5	0	D	39 - 130				02/14/14 16:00	02/17/14 14:56	10
Phenol-d5	. 0	D	25 - 1,30				02/14/14 16:00	02/17/14 14:56	. 10
Terphenyl-d14	0	D	10 - 143				02/14/14 16:00	02/17/14 14:56	14
2,4,6-Tribromophenol	O	D	31 - 141				02/14/14 16:00	02/17/14 14:56	10
Method: RSK-175 - Dissolved	I Gases (GC)								
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	1.1	Ü	1.1	COLUMN ACCOUNT ACCOUNT ACCOUNT ACCOUNT ACCOUNT ACCOUNT ACCOUNT ACCOUNT ACCOUNT ACCOUNT ACCOUNT ACCOUNT ACCOUNT	ug/L			02/25/14 12:38	
Ethylene	1.0	U	1.0		ug/L			02/25/14 12:38	
Methane	24		0.58		ug/L			02/25/14 12:38	
Method: 6010C - Metals (ICP)	- Total Recoverat	ole							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Iron	10		0.050		mg/L		02/13/14 14:48	02/17/14 00:05	
Manganese	0.42		0.010		mg/L		02/13/14 14:48	02/17/14 00:05	,
General Chemistry									
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Chloride	59	J	2.0		mg/L			02/18/14 12:41	:
Nitrate as N	0,050	U	0.050		mg/L			02/13/14 21:23	•
Sulfate	56		10		mg/L			02/18/14 17:17	;
Fotal Organic Carbon	7.9		1.0		mg/L			02/20/14 00:52	
Analyte		Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fa
Alkalinity	440		5.0		mg/L			02/23/14 18:04	
Carbon Dioxide, Free	29		5,0		mg/L			02/23/14 18:04	

MAR 1 3 2014

Client: Solutia Inc.

Analyte

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98575-1

SDG: KPS111

Client Sample ID: CPA-MW-2D-F(0.2)-0214

Date Collected: 02/12/14 15:10 Date Received: 02/13/14 09:40

Dissolved Organic Carbon

Lab Sample ID: 680-98575-2

Prepared

Matrix: Water

Method: 6010C - Metals (ICP) - Dis	solved								
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	8.4		0.050		mg/L	LIFE	02/13/14 14:48	02/17/14 00:10	1
Manganese, Dissolved	0.42		0.010		mg/L		02/13/14 14:48	02/17/14 D0:10	1
General Chemistry - Dissolved									

RL

1.0

MDL Unit

mg/L

Result Qualifier

7.3 H J

c

Analyzed Dil Fac 02/14/14 15:53 1

ij



Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98575-1

SDG: KPS111

Client Sample ID: CPA-MW-2D-0214-AD

Date Collected: 02/12/14 15:10 Date Received: 02/13/14 09:40 Lab Sample ID: 680-98575-3

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1000		250		ug/L	W/PR/0000 1987		02/21/14 14:33	250
Chlorobenzene	26000		250		ug/L			02/21/14 14:33	250
1,2-Dichlorobenzene	250	υ	250		ug/L			02/21/14 14:33	250
1,3-Dichlorobenzene	420		250		ug/L			02/21/14 14:33	250
1,4-Dichlorobenzene	8400		250		ug/L			02/21/14 14:33	250
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	95		70 - 130					02/21/14 14:33	250
Dibromofluoromethane	94		70 - 130					02/21/14 14:33	250
Toluene-d8 (Surr)	92		70 - 130					02/21/14 14:33	250
Toluene-d8 (Surr)  Method: 8270D - Semivolat		nds (GC/M						02/21/14 14:33	250
	ile Organic Compou	nds (GC/M) Qualifier		MDL	Unit	D	Prepared	02/21/14 14:33 Analyzed	250 Dil Fac
Method: 8270D - Semivolat	ile Organic Compou	-	5)	MDL	Unit ug/L	D	Prepared 02/14/14 16:00		
Method: 8270D - Semivolat Analyte 2-Chlorophenol	ile Organic Compou Result	Qualifier U	S)	MDL		D		Analyzed	Dil Fac
Method: 8270D - Semivolat Analyte 2-Chlorophenol 1,2,4-Trichlorobenzene	ile Organic Compou Result 110	Qualifier U U	RL 110	MDL	ug/L	D	02/14/14 16:00	Analyzed 02/17/14 15:20	Dil Fac
Method: 8270D - Semivolat Analyte 2-Chlorophenol 1,2,4-Trichlorobenzene Surrogate	ile Organic Compou Result 110 110 %Recovery	Qualifier U U	RL 110 110	MDL	ug/L	<u>D</u>	02/14/14 16:00 02/14/14 16:00	Analyzed 02/17/14 15:20 02/17/14 15:20	Dil Fac 10
Method: 8270D - Semivolat Analyte 2-Chlorophenol 1,2,4-Trichlorobenzene Surrogate 2-Fluorobiphenyl	ile Organic Compou Result 110 110 %Recovery	Qualifier U U Qualifier	RL 110 110 <i>Limits</i>	MDL	ug/L	<u>D</u>	02/14/14 16:00 02/14/14 16:00 Prepared	Analyzed 02/17/14 15:20 02/17/14 15:20 Analyzed	Dil Fac
Method: 8270D - Semivolat Analyte 2-Chlorophenol 1,2,4-Trichlorobenzene Surrogate 2-Fluorobiphenyl 2-Fluorophenol	ile Organic Compou Result 110 110 %Recovery	Qualifier U U Qualifier D	RL 110 110 2 Limits 38 - 130	MDL	ug/L	D	02/14/14 16:00 02/14/14 16:00 Prepared 02/14/14 16:00	Analyzed 02/17/14 15:20 02/17/14 15:20  Analyzed 02/17/14 15:20	Dil Fac 10 10 Dil Fac
Method: 8270D - Semivolat Analyte 2-Chlorophenol 1,2,4-Trichlorobenzene Surrogate 2-Fluorobiphenyl 2-Fluorophenol Nitrobenzene-d5	ile Organic Compou Result 110 110 %Recovery 0 0	Qualifier U U Qualifier D	RL 110 110 110  Limits 38 - 130 25 - 130	MDL	ug/L	<u>D</u>	02/14/14 16:00 02/14/14 16:00 Prepared 02/14/14 16:00 02/14/14 16:00	Analyzed 02/17/14 15:20 02/17/14 15:20  Analyzed 02/17/14 15:20 02/17/14 15:20	Dil Fai 11 11 Dil Fa 11
Method: 8270D - Semivolat Analyte	Result 110 110 %Recovery	Qualifier U U Qualifier D D	RL 110 110 110  Limits 38 - 130 25 - 130 39 - 130	MDL	ug/L	<u>D</u>	02/14/14 16:00 02/14/14 16:00 Prepared 02/14/14 16:00 02/14/14 16:00 02/14/14 16:00	Analyzed 02/17/14 15:20 02/17/14 15:20  Analyzed 02/17/14 15:20 02/17/14 15:20 02/17/14 15:20	Dil Fac 10 10 Dil Fac 10

MAR 1 3 2014

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98575-1

SDG: KPS111

Client Sample ID: ESL-MW-D1-0214 Lab Sample ID: 680-98575-4

Date Collected: 02/12/14 11:05 Date Received: 02/13/14 09:40

Matrix: Water

Method: 8260B - Volatile Or Analyte	•	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	62		25		ug/L			02/21/14 14:05	25
Chiorobenzene	2500		25		ug/L			02/21/14 14:05	25
1.2-Dichlorobenzene	2500	11	25		ug/L			02/21/14 14:05	25
1,3-Dichlorobenzene	25	_	25		ug/L			02/21/14 14:05	25
1,4-Dichlorobenzene	60	U	25		ug/L			02/21/14 14:05	25
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	97		70 - 130					02/21/14 14:05	25
Dibromofluoromethane	92		70 - 130					02/21/14 14:05	25
Toluene-d8 (Surr)	92		70 - 130					02/21/14 14:05	25
Method: RSK-175 - Dissolve	ed Gases (GC)								
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	1.1	Ū	1.1		ug/L	.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		02/25/14 12:51	The Reservoir Control
Ethylene	1.0	U	1.0		ug/L			02/25/14 12:51	
Methane	18		0.58		ug/L			02/25/14 12:51	1
Method: 6010C - Metals (ICI	P) - Total Recoveral	ole							
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	16		0.050		mg/L		02/13/14 14:48	02/17/14 00:15	
Manganese .	0.41		0.010		mg/L ,		02/13/14 14:48	02/17/14 00;15	1
General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	120	***************************************	5.0	access a record of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of th	mg/L			02/18/14 13:36	
Nitrate as N	0.050	U	0.050		mg/L			02/13/14 21:26	
Sulfate	560		100		mg/L			02/18/14 17:39	28
Total Occasio Cochen	3.5		1.0		mg/L			02/20/14 01:08	
Total Organic Carbon		Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fa
•	Result	Qualifier							
Total Organic Carbon  Analyte  Alkalinity	Result 370		5.0		mg/L		L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 1000 L. 100	02/23/14 18:12	

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98575-1

SDG: KPS111

Client Sample ID: ESL-MW-D1-F(0.2)-0214

Date Collected: 02/12/14 11:05 Date Received: 02/13/14 09:40 Lab Sample ID: 680-98575-5

Matrix: Water

1	Method: 6010C - Metals (ICP) - Dissolved									
-	Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Iron, Dissolved	16		0.050		mg/L		02/13/14 14:48	02/17/14 00:19	1
7	Manganese, Dissolved	0.40		0.010		mg/L		02/13/14 14:48	02/17/14 00:19	1
-	Ganaral Chamistry Discolund									

General Chemistry - Dissolved									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Oil Fac
Dissolved Organic Carbon	3.5	нЈ	1.0		mg/L	_		02/14/14 16:35	1

MAR 1 3 2014

Client: Solutia Inc.

Dibromofluoromethane

Toluene-d8 (Surr)

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98575-1

SDG: KPS111

Client Sample ID: 1Q14 LTM Trip Blank #6

Date Collected: 02/12/14 00:00 Date Received: 02/13/14 09:40 Lab Sample ID: 680-98575-6

02/21/14 15:17 02/21/14 15:17

Matrix: Water

Method: 8260B - Volatile Org	ganic Compounds	(GC/MS)						
Analyte	Result	Qualifier	RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	Ū	1.0	ug/L	211-024-000 PP-11-		02/21/14 15:17	1
Chlorobenzene	1.0	U	1.0	ug/L			02/21/14 15:17	1
1,2-Dichlorobenzene	1.0	U	1.0	ug/L			02/21/14 15:17	1
1,3-Dichlorobenzene	1.0	U	1.0	ug/L			02/21/14 15:17	1
1,4-Dichlorobenzene	1.0	U	1.0	ug/L			02/21/14 15:17	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	99		70 - 130		•		02/21/14 15:17	7

70 - 130

70 - 130

97

8

MAR 1 3 2014

### **Surrogate Summary**

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98575-1

SDG: KPS111

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water Prep Type: Total/NA

				Percent Surro	gate Recovery (Acceptance Limits)
		BFB	DBFM	TOL	
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	(70-130)	
680-98575-1	CPA-MW-2D-0214	95	96	92	
680-98575-3	CPA-MW-2D-0214-AD	95	94	92	
680-98575-4	ESL-MW-D1-0214	97	92	92	
680-98575-6	1Q14 LTM Trip Blank #6	99	97	99	
LCS 680-316403/4	Lab Control Sample	97	91	97	
LCS 680-316608/5	Lab Control Sample	112	92	108	
LCS 680-316609/4	Lab Control Sample	101	90	94	
LCSD 680-316403/5	Lab Control Sample Dup	99	93	101	
LCSD 680-316608/9	Lab Control Sample Dup	99	89	101	
LCSD 680-316609/5	Lab Control Sample Dup	107	90	101	
MB 680-316403/8	Method Blank	94	100	88	
MB 680-316608/7	Method Blank	98	97	97	
MB 680-316609/8	Method Blank	97	97	89	

BFB = 4-Bromofluorobenzene

DBFM = Dibromofluoromethane

TOL ≈ Toluene-d8 (Surr)

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Prep Type: Total/NA Matrix: Water

			Percent Surrogate Recovery (Acceptance Limits						
		FBP	2FP	NBZ	PHL	TPH	TBP		
Lab Sample ID	Client Sample ID	(38-130)	(25-130)	(39-130)	(25-130)	(10-143)	(31-141)		
680-98575-1	CPA-MW-2D-0214	0 D	0 D	0 D	0 D	0 D	0 D		
680-98575-3	CPA-MW-2D-0214-AD	0 D	0 D	0 D	0 D	0 D	0 D		
LCS 680-315638/7-A	Lab Control Sample	74	70	80	70	81	82		
LCSD 680-315638/8-A	Lab Control Sample Dup	75	74	83	76	79	83		
MB 680-315638/6-A	Method Blank	76	76	86	78	90	84		

Surrogate Legend

FBP = 2-Fluorobiphenyl

2FP ≈ 2-Fluorophenol

NBZ ≈ Nitrobenzene-d5

PHL ≈ Phenol-d5

TPH = Terphenyl-d14

TBP = 2,4,6-Tribromophenol

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98575-1

SDG: KP\$111

### Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 680-316403/8

Matrix: Water

Analysis Batch: 316403

Client Sample ID: Method Blank	
Daniel T	

Prep Type: Total/NA

i		MB	MB							
	Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Benzene	1.0	U	1.0		ug/L	 _		02/20/14 12:52	1
	Chlorobenzene	1.0	U	1.0		ug/L			02/20/14 12:52	1
1	1,2-Dichlorobenzene	1.0	U	1.0		ug/L			02/20/14 12:52	1
į	1,3-Dichlorobenzene	1.0	U	1.0		ug/L			02/20/14 12:52	1
	1,4-Dichlorobenzene	1.0	U	1.0		ug/L			02/20/14 12:52	1
i										

	1,4°EIGIIDIODENZENE	1.0	O	1,0	agre		OBZO/14 1Z.OZ	•	33
-		MB	MB						200
	Surrogate	%Recovery	Qualifier	Limits		Prepared	Analyzed	Dil Fac	100
1	4-Bromofluorobenzene	94	***************************************	70 - 130			02/20/14 12:52	1	
1	Dibromofluoromethane	100		70 - 130			02/20/14 12:52	1	
-	Toluene-d8 (Surr)	88		70.130			02/20/14 12:52	1	

Lab Sample ID: LCS 680-316403/4

Matrix: Water

Analysis Batch: 316403

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

		Spike	LCS	LC\$				%Rec.	
Analyte		Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene		50.0	51.8		ug/L		104	74 - 123	 
Chlorobenzene		50.0	46.7		ug/L		93	79 - 120	
1,2-Dichlorobenzene	*	50.0	46.3		ug/L		93	¹77 - 124	
1,3-Dichlorobenzene		50.0	47.4		ug/L		95	79 - 123	
1,4-Dichlorobenzene		50.0	46.5		ug/L		93	76 - 124	

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene	97		70 - 130
Dibromofluoromethane	91		70 - 130
Toluene-d8 (Surr)	97		70 - 130

Lab Sample ID: LCSD 680-316403/5

Matrix: Water

Analysis Ratch: 316403

Client Sample ID: Lab Control Sample Dup Prep Type: Total/NA

RPD
Limit
30
30
30
30
30
_

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene	99		70 - 130
Dibromofluoromethane	93		70 - 130
Toluene-dB (Surr)	101		70 - 130

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98575-1

Client Sample ID: Method Blank

SDG: KPS111

Prep Type: Total/NA

### Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 680-316608/7

Matrix: Water

Analyte Benzene

Analysis Batch: 316608

MB	MB							
Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,0	Ü	1.0		ug/L			02/21/14 11:55	1
1.0	U	1.0		ug/L			02/21/14 11:55	1
							00104144 44.55	

Chlorobenzene 1,2-Dichtorobenzene 1.0 U 1.0 ug/L 02/21/14 11:55 1,3-Dichlorobenzene ug/L 02/21/14 11:55

	1,4-Dichloropenzene	1.0	U	1.0	ug/L		02/23/14 11.55	'	
of the second		МВ	MB						
	Surrogate	%Recovery	Qualifier	Limits		Prepared	Analyzed	Dil Fac	
	4-Bromofluorobenzene	98		70 - 130		V-12/744	02/21/14 11:55	1	
	Dibromofluoromethane	97		70 - 130			02/21/14 11:55	1	
	Toluene-d8 (Surr)	97		70 - 130			02/21/14 11:55	1	

Lab Sample ID: LCS 680-316608/5 Client Sample ID: Lab Control Sample Prep Type: Total/NA Matrix: Water

Analysis Batch: 316608

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	50.0	53.3		ug/L		107	74 - 123	
Chlorobenzene	50.0	51.2		ug/L		102	79.120	
1,2-Dichlorobenzene	50.0	55.5		ug/L		111 '	77 - 124	
1,3-Dichlorobenzene	50.0	56.6		ug/L		113	79 - 123	
1,4-Dichlorobenzene	50.0	54.1		ug/L		108	76 - 124	

ì		LCS LCS					
i	Surrogate	%Recovery	Qualifier	Limits			
	4-Bromofluorobenzene	112		70 - 130			
	Dibromofluoromethane	92		70 - 130			
į	Toluene-d8 (Surd)	108		70 . 130			

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_ab Sample ID: LCSD 680-316608/9	Client Sample ID: Lab Control Sample Dup
Matrix: Water	Prep Type: Total/NA
Analysis Batch: 316608	

	Spike	LCSD	LCSD			%Rec.		RPD
Analyte	Added	Result	Qualifier (	Unit D	%Rec	Limits	RPD	Limit
Benzene	50.0	50,9		ug/L	102	74 - 123	5	30
Chiorobenzene	50.0	46.4	ı	ug/L	93	79 - 120	10	30
1,2-Dichlorobenzene	50.0	48.3		ug/L	97	77 - 124	14	30
1,3-Dichlorobenzene	50.0	49.2		ug/L	98	79 - 123	14	30
1,4-Dichlorobenzene	50.0	48.2	1	ug/L	96	76 - 124	12	30

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene	99		70 - 130
Dibromofluoromethane	89		70 - 130
Toluene-d8 (Surr)	101		70 - 130

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Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98575-1

SDG: KPS111

### Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 680-316609/8

Matrix: Water

Analysis Batch: 316609

Client Sample ID: Method Blank
Pron Type: Total/NA

	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dit Fac
Benzene	1.0	υ	1.0		ug/L	 	THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE P	02/21/14 12:38	1
Chlorobenzene	1.0	υ	1.0		ug/L			02/21/14 12:38	1
1,2-Dichlorobenzene	1.0	υ	1.0		ug/L			02/21/14 12:38	1
1,3-Dichlorobenzene	1.0	υ	1.0		ug/L			02/21/14 12:38	1
1,4-Dichlorobenzene	1.0	υ	1.0		ug/L			02/21/14 12:38	1

MB MB Dil Fac Analyzed %Recovery Qualifier Limits Prepared 02/21/14 12:38 4-Bromofluorobenzene 97 70 - 130 Dibromofluoromethane 70 - 130 02/21/14 12:38 97 02/21/14 12:38 Toluene-d8 (Surr) 70 - 130 89

Lab Sample ID: LCS 680-316609/4 Matrix: Water

Analysis Batch: 316609

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

	Spike	LCS	LCS				%Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
Benzene	 50.0	50.0		ug/L		100	74 - 123
Chiorobenzene	50.0	47.6		ug/L		95	79 - 120
1,2-Dichlorobenzene	50.0	48,2		ug/L		96	77 - 124
1,3-Dichlorobenzene	50.0	50,6		ug/L		101	79 - 123
1,4-Dichlorobenzene	50.0	48.5		ug/L		97	76 - 124

LCS LCS Surrogate %Recovery Qualifier Limits 70 - 130 4-Bromofluorobenzene 101 Dibromofluoromethane 90 70 - 130 Toluene-d8 (Surr) 94 70 - 130

Lab Sample ID: LCSD 680-316609/5

Matrix: Water

Analysis Batch: 316609

Client Sample ID: Lab	Control Sample Dup
	Prep Type: Total/NA

Analysis battii. 310009										
	Spike	LCSD	LCSD				%Rec.		RPD	
Analyte	Added	Result	Qualifier	Unit	D '	%Rec	Limits	RPD	Limit	
Benzene	50.0	52.8		ug/L		106	74 - 123	6	30	
 Chiorobenzene	50.0	48.5		ug/L		97	79 - 120	2	30	
1,2-Dichlorobenzene	50,0	50.8		ug/L		102	77 - 124	5	30	
1,3-Dichlorobenzene	50.0	52.0		ug/L		104	79 - 123	3	30	
1,4-Dichlorobenzene	50.0	50.7		ug/L		101	76 - 124	4	30	

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene	107		70 - 130
Dibromofluoromethane	90		70 - 130
Toluene-d8 (Surr)	101		70 - 130

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Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98575-1

SDG: KPS111

### Method: 8270D - Semivolatile Organic Compounds (GC/MS)

мв мв

Result Qualifier

Lab Sample ID: MB 680-315638/6-A

Matrix: Water

Analyte

Analysis Batch: 315832

Client Sample ID	: Method Blank
	1011

Analyzed

Prepared

Prep Type: Total/NA

Prep Batch: 315638

Dil Fac

2-Chlorophenol	10	U	10	ug/L	02/34/14 16:00	02/1//14 12:05	1
1,2,4-Trichlorobenzene	10	U	10	ug/L	02/14/14 16:00	02/17/14 12:05	1
	MB	мв					
Surrogate	%Recovery	Qualifier	Limits		Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	76		38 - 130		02/14/14 16:00	02/17/14 12:05	1
2-Fluorophenol	76		25 - 130		02/14/14 16:00	02/17/14 12:05	1
Nitrobenzene-d5	86		39 - 130		02/14/14 16:00	02/17/14 12:05	1
Phenol-d5	78		25 - 130		02/14/14 16:00	02/17/14 12:05	1
Terphenyl-d14	90		10 - 143		02/14/14 16:00	02/17/14 12:05	1
2,4,6-Tribromophenol	84		31 - 141		02/14/14 16:00	02/17/14 12:05	1

RL

MDL Unit

Lab Sample ID: LCS 680-315638/7-A

Matrix: Water

2,4,6-Tribromophenol

Analysis Batch: 315832

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 315638

200		Spike	LC\$	LCS				%Rec.	
	Analyte	Added	Result	Qualifier	Unit	Đ	%Rec	Limits	 
	4-Chloroaniline	 100	14.1	J *	ug/L		(14)	42 - 130	
	2-Chlorophenol	100	73.3		ug/L		73	57 - 130	
	1,4-Dioxane	100	65.1		ug/L		' 65	35 - 130	
	1,2,4-Trichlorobenzene	100	54.8		ug/L		55	42 - 130	

Surrogate	%Recovery	Qualifier	Limits
2-Fluorobiphenyl	74		38 - 130
2-Fluorophenol	70		25 - 130
Nitrobenzene-d5	80		39 - 130
Phenol-d5	70		25 - 130
Terphenyl-d14	81		10 - 143
2,4,6-Tribromophenol	82		31 - 141

Lab Sample ID: LCSD 680-315638/8-A

Matrix: Water

Analysis Batch: 315832

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA Prep Batch: 315638

	Analysis Baton, Croses										
	•	Spike	LCSD	LCSD				%Rec.		RPD	
i	Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
-	4-Chloroaniline	100	12.3	J.	ug/L		(12)	42 - 130	14	50	
	2-Chlorophenol	100	75.2		ug/L		75	57 - 130	3	50	
	1,4-Dioxane	100	62.8		ug/L		63	35 - 130	4	50	
	1,2,4-Trichlorobenzene	100	56.5		ug/L		56	42 - 130	3	50	

LCSD LCSD

Surrogate	%Recovery	Qualifier	Limits
2-Fluorobiphenyl	75		38 - 130
2-Fluorophenol	74		25 - 130
Nitrobenzene-d5	83		39 - 130
Phenol-d5	76		25 - 130
Terphenyi-d14	79		10 - 143
2,4,6-Tribromophenol	83		31 - 141

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Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98575-1

SDG: KPS111

### Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 680-317026/8

Matrix: Water

Client Sample ID: Method Blank
Prep Type: Total/NA

Analysis Batch: 317026

	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	1.1	U	1.1	***************************************	ug/L			02/25/14 11:41	1
Ethylene	1.0	IJ	1.0		ug/L			02/25/14 11:41	1
Methane	0.58	ប	0,58		ug/L			02/25/14 11:41	1
Methane (TCD)	390	υ	390		ug/L			02/25/14 11:41	1

Lab Sample ID: LCS 680-317026/4 Client Sample ID: Lab Control Sample
Matrix: Water Prep Type: Total/NA

Analysis Batch: 317026

		Spike	LCS	LCS				%Rec.	
	Analyte	Added	Result	Qualifier	Unit	D		Limits	
	Ethane	288	264		ug/L		91	75 - 125	 
-	Ethylene	269	254		ug/L		94	75 - 125	
	Methane	154	131		ug/L		85	75 - 125	

Lab Sample ID: LCS 680-317026/5

Matrix: Water

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analysis Batch: 317026

- 0	, ,,,,a,,,a,, = a,,,,,, = 1, = <b>a</b>									
	_	Spike	LCS	LCS				%Rec.		
-	Analyte	Added	Result	Qualifier	Unit	Đ	%Rec	Limits		
	Methane (TCD)	 1920	1480	***************************************	ug/L	_	77	75 - 125	***************************************	,

Lab Sample ID: LCSD 680-317026/6

Matrix: Water

Analysis Batch: 317026

Spike LCSD LCSD Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

RPD

 Analyte
 Added
 Result
 Qualifier
 Unit
 D
 %Rec
 Limits
 RPD
 Limit

 Methane (TCD)
 1920
 1870
 ug/L
 97
 75 - 125
 24
 30

Lab Sample ID: LCSD 680-317026/7

Matrix: Water

Analysis Batch: 317026

		Spike	LCSD	LCSD				%Rec.		RPD
Analyte		Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Ethane		288	275		ug/L		95	75 - 125	4	30
Ethylene	:	269	260		ug/L		97	75 - 125	2	30
Methane		154	137		ug/L		89	75 - 125	4	30

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 680-315521/1-A

Matrix: Water

Analysis Batch: 315879

MB MB

Analyte Result Qualifier RL MDL Unit D Prepared Analyzed Dil Fac

Dil Fac	
1	
1	
1	
1	
	1 1 1

TestAmerica Savannah

Prep Type: Total/NA

Client Sample ID: Lab Control Sample Dup

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98575-1

Client Sample ID: Lab Control Sample

SDG: KPS111

Method: 6010C - Metals	(ICP)	(Continued)
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Lab Sample ID: LCS 680-315521/2-A					Client	Sample	ID: Lab C	ontrol Sample
Matrix: Water						Prep '	Type: Tota	I Recoverable
Analysis Batch: 315879							Prep	Batch: 315521
	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
fron	5.00	5.31		mg/L		106	75 - 125	
Iron, Dissolved	5.00	5.31		mg/L		106	75 - 125	
Manganese	0,500	0.516		mg/L		103	75 - 125	
Manganese, Dissolved	0.500	0.516		mg/L		103	75 - 125	

### Method: 310.1 - Alkalinity

Lab Sample ID: LCS 680-316851/6

Lab Sample ID: MB 680-316851/5	Client Sample ID: Method Blank
Matrix: Water	Prep Type: Total/NA
Analysis Batch: 316851	
MB MB	

	MB	MB							
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	5.0	U	5.0		mg/L		handle the strong of the strategy	02/23/14 16:44	1
Carbon Dioxide, Free	5.0	U	5.0		mg/L			02/23/14 16:44	1

Matrix: Water								Prep i	ype: 10	otal/N
Analysis Batch: 316851										
		Spike	LCS	LCS				%Rec.		
Analyte		Added	Result	Qualifier	Unit	D	%Rec	Limits		
Alkalinity	 	250	209		ma/L		84	80 - 120		***************************************

	Lab Sample ID: LCSD 680-316851/32				Client	San	iple ID:	Lab Contro	of Samp	le Dup
	Matrix: Water							Prep T	ype: To	tai/NA
	Analysis Batch: 316851									
		Spike	LCSD	LCSD				%Rec.		RPD
-	Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Límit
-	All2-is.	050	245	hard-renormalization of the second	man)		96	90 100	2	20

Alkalinity	Democratical Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the Contraction of the	 250	215	U.	ng/L	86	80 - 120	3	30
s									
Method: 325.2 - Chloride		 y 1, 1, <b>-</b>		. 80. 5 8					

Lab Sample ID: MB 680-316243/21							Client Sai	mple ID: Metho	d Blank
Matrix: Water								Prep Type: 1	otal/NA
Analysis Batch: 316243									
	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1.0	U	1.0	***************************************	mg/L		***************************************	02/18/14 12:52	1
*··									

	Lab Sample ID: LCS 680-316243/20				(	Clien	t Samp	le ID: Lab C	ontroi Sample
	Matrix: Water							Prep T	ype: Total/NA
-	Analysis Batch: 316243								
		Spike	LCS	LCS				%Rec.	
- 1	Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
-	Chloride	25.0	25.8	ZARONINOSTI PROVENICA	mg/L		103	85 - 115	Executive to the second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98575-1

SDG: KPS111

Method: 325.2 - Chloride (Continued)

Lab Sample ID: 680-98575-1 MS Client Sample ID: CPA-MW-2D-0214 Matrix: Water Prep Type: Total/NA

Analysis Batch: 316243 MS MS %Rec. Sample Sample Spike Limits Analyte Result Qualifier Added Result Qualifier Hnit Chloride 78.7 F1 во 85 - 115 50 25.0 mg/L

Lab Sample ID: 680-98575-1 MSD

Matrix: Water

Analysis Batch: 316243

Client Sample ID: CPA-MW-2D-0214 Prep Type: Total/NA

Sample Sample Spike MSD MSD %Rec. RPD Analyte Result Qualifier Added Result Qualifier Unit Limits RPD Limit Chloride 59 25.0 79.0 F1 81 85 - 115 30 mg/L

Method: 353.2 - Nitrogen, Nitrate-Nitrite

Lab Sample ID: MB 680-315605/13 Client Sample ID: Method Blank Matrix: Water Prep Type: Total/NA

Analysis Batch: 315605

MB MB Analyte Result Qualifier MDL Unit Dil Fac RL Analyzed Prepared Nitrate as N 02/13/14 21:01 0.050 U 0.050 mg/L

Lab Sample ID: LCS 680-315605/14 Client Sample ID: Lab Control Sample Matrix: Water Prep Type: Total/NA

Analysis Batch: 315605

%Rec. Spike LCS LCS Analyte Qualifier Unit %Rec Limits Added Result Nitrate as N 0.500 0.547 mg/L 109 90 - 110 Nitrate Nitrite as N 1.00 1.04 mg/L 104 90 - 110 Nitrite as N 0.500 99 90.110 0.496 mg/L

Lab Sample ID: LCSD 680-315605/34 Client Sample ID: Lab Control Sample Dup

Matrix: Water

Analysis Batch: 315605

%Rec. Spike LCSD LCSD RPD Analyte Added Result Qualifier Unit %Rec Limits RPD Limit Nitrate as N 0.500 0.551 110 mg/L 10 Nitrate Nitrite as N 1.00 105 90 - 110 ٥ 10 1.05 mg/L Nitrite as N 0.500 90 - 110 0.496 mg/L 99 o 10

Method: 375.4 - Sulfate

Lab Sample ID: MB 680-316246/23 Client Sample ID: Method Blank Matrix: Water Prep Type: Total/NA

Analysis Batch: 316246

MB MB RL Analyte Result Qualifier Dit Fac MDL Unit Prepared Analyzed Sulfate 5.0 02/18/14 17:15 5.0 U mg/L

TestAmerica Savannah

Prep Type: Total/NA

Client: Solutia Inc. TestAmerica Job ID: 680-98575-1 SDG: KPS111 Project/Site: WGK Long Term Monitoring - 1Q14 Method: 375.4 - Sulfate (Continued) Lab Sample ID: LCS 680-316246/6 Client Sample ID: Lab Control Sample Matrix: Water Prep Type: Total/NA Analysis Batch: 316246 Spike LCS LCS %Rec. Added Result Qualifier Unit %Rec Limits Analyte Sulfate 20,0 19.9 mg/L 100 75 - 125 Method: 415.1 - DOC Client Sample ID: Method Blank Lab Sample ID: MB 680-315813/6 Matrix: Water Prep Type: Dissolved Analysis Batch: 315813 мв мв Result Qualifier MDL Unit Prepared Analyzed Dil Fac Analyte RL Dissolved Organic Carbon 1.0 Ũ 1.0 02/14/14 15:36 mg/L Client Sample ID: Lab Control Sample Lab Sample ID: LCS 680-315813/5 Prep Type: Dissolved Matrix: Water Analysis Batch: 315813 Spike LCS LCS %Rec. Analyte Added Result Qualifier Limits Unit Dissolved Organic Carbon 20.0 20.6 mg/L Lab Sample ID: 680-98575-2 MS Client Sample ID: CPA-MW-2D-F(0.2)-0214 Matrix: Water Prep Type: Dissolved Analysis Batch: 315813 MS MS %Rec. Spike Sample Sample Limits Analyte Result Qualifier Added Result Qualifier Unit %Rec 80 - 120 Dissolved Organic Carbon 7.3 H qq 20.0 27 1 mg/L Client Sample ID: CPA-MW-2D-F(0.2)-0214 Lab Sample ID: 680-98575-2 MSD Matrix: Water Prep Type: Dissolved Analysis Batch: 315813 MSD MSD %Rec. RPD Sample Sample Spike Analyte Result Qualifier Added Qualifier Unit %Rec Limits RPD Limit Result Dissolved Organic Carbon 7.3 H 20.0 26.5 96 80 - 120 mg/L Method: 415.1 - TOC Lab Sample ID: MB 680-316597/2 Client Sample ID: Method Blank Prep Type: Total/NA Matrix: Water Analysis Batch: 316597 мв мв Analyte Result Qualifier MDL Unit Prepared Dil Fac RL Analyzed 1.0 mg/L 02/19/14 18:14 Total Organic Carbon 1.0 U Lab Sample ID: LCS 680-316597/5 Client Sample ID: Lab Control Sample

TestAmerica Savannah

Prep Type: Total/NA

%Rec.

Limits

80 - 120

%Rec

104

LCS LCS

Unit

mg/L

Result

20.8

Spike

Added

20,0

Matrix: Water

Total Organic Carbon

Analysis Batch: 316597

### **QC Association Summary**

Client: Solutia Inc.

GC/MS VOA

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98575-1

SDG: KP\$111

Lab Camata IS	611	B &
Analysis Batch: 316403		
,		 ··· ··· · · · · · · · · · · · · · · ·

i	Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
	680-98575-1	CPA-MW-2D-0214	Total/NA	Water	8260B	
	LCS 680-316403/4	Lab Control Sample	Total/NA	Water	8260B	
	LCSD 680-316403/5	Lab Control Sample Dup	Total/NA	Water	8260B	
	MB 680-316403/8	Method Blank	Total/NA	Water	8260B	

### Analysis Batch: 316608

	Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
-	680-98575-6	1Q14 LTM Trip Blank #6	Total/NA	Water	8260B	
	LCS 680-316608/5	Lab Control Sample	Total/NA	Water	8260B	
	LCSD 680-316608/9	Lab Control Sample Dup	Total/NA	Water	8260B	
	MB 680-316608/7	Method Blank	Total/NA	Water	8260B	
-						

### Analysis Batch: 316609

Analysis Batom 9 1995						
	Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
-	680-98575-3	CPA-MW-2D-0214-AD	Total/NA	Water	8260B	
-	680-98575-4	ESL-MW-D1-0214	Total/NA	Water	8260B	
	LCS 680-316609/4	Lab Control Sample	Total/NA	Water	8260B	
	LCSD 680-316609/5	Lab Control Sample Dup	Total/NA	Water	8260B	
	MB 680-316609/8	Method Blank	Total/NA	Water	8260B	
-						

#### GC/MS Semi VOA

### Prep Batch: 315638

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-98575-1	CPA-MW-2D-0214	Total/NA	Water	3520C	***************************************
680-98575-3	CPA-MW-2D-0214-AD	Total/NA	Water	3520C	
LCS 680-315638/7-A	Lab Control Sample	Total/NA	Water	3520C	
LCSD 680-315638/8-A	Lab Control Sample Dup	Total/NA	Water	3520C	
MB 680-315638/6-A	Method Błank	Total/NA	Water	3520C	

### Analysis Batch: 315832

Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batch
680-98575-1	CPA-MW-2D-0214	Total/NA	Water	8270D	315638
680-98575-3	CPA-MW-2D-0214-AD	Total/NA	Water	8270D	315638
LCS 680-315638/7-A	Lab Control Sample	Total/NA	Water	8270D	315638
LCSD 680-315638/8-A	Lab Control Sample Dup	Total/NA	Water	8270D	315638
MB 680-315638/6-A	Method Blank	Total/NA	Water	8270D	315638

### GC VOA

### Analysis Batch: 317026

Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method Prep Batch
680-98575-1	CPA-MW-2D-0214	Total/NA	Water	RSK-175
680-98575-4	ESL-MW-D1-0214	Total/NA	Water	RSK-175
LCS 680-317026/4	Lab Control Sample	Total/NA	Water	RSK-175
LCS 680-317026/5	Łab Control Sample	Total/NA	Water	RSK-175
LCSD 680-317026/6	Łab Control Sample Dup	Total/NA	Water	RSK-175
LCSD 680-317026/7	Lab Control Sample Dup	Total/NA	Water	RSK-175
MB 680-317026/8	Method Blank	Total/NA	Water	RSK-175

### **QC Association Summary**

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98575-1

#### Metals

Prep	Batch:	315	521
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-	Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
	680-98575-1	CPA-MW-2D-0214	Total Recoverable	Water	3005A	
1	680-98575-2	CPA-MW-2D-F(0.2)-0214	Dissolved	Water	3005A	
	680-98575-4	ESL-MW-D1-0214	Total Recoverable	Water	3005A	
	680-98575-5	ESL-MW-D1-F(0.2)-0214	Dissolved	Water	3005A	
	LCS 680-315521/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
	MB 680-315521/1-A	Method Blank	Total Recoverable	Water	3005A	
- 1						

### Analysis Batch: 315879

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-98575-1	CPA-MW-2D-0214	Total Recoverable	Water	6010C	315521
680-98575-2	CPA-MW-2D-F(0.2)-0214	Dissolved	Water	6010C	315521
680-98575-4	ESL-MW-D1-0214	Total Recoverable	Water	6010C	315521
680-98575-5	ESL-MW-D1-F(0.2)-0214	Dissolved	Water	6010C	315521
LCS 680-315521/2-A	Lab Control Sample	Total Recoverable	Water	6010C	315521
MB 680-315521/1-A	Method Blank	Total Recoverable	Water	6010C	315521

### **General Chemistry**

### Analysis Batch: 315605

Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batch
680-98575-1	CPA-MW-2D-0214	Total/NA	Water	353.2	LANGUAGE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPE
680-98575-4	ESL-MW-D1-0214	Total/NA	Water	353.2	
LCS 680-315605/14	Lab Control Sample	Total/NA	Water	353.2	
LCSD 680-315605/34	Lab Control Sample Dup	Total/NA	Water	353.2	
MB 680-315605/13	Method Blank	Total/NA	Water	353.2	

### Analysis Batch: 315813

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-98575-2	CPA-MW-2D-F(0,2)-0214	Dissolved	Water	415.1	
680-98575-2 MS	CPA-MW-2D-F(0.2)-0214	Dissolved	Water	415.1	
680-98575-2 MSD	CPA-MW-2D-F(0.2)-0214	Dissolved	Water	415.1	
680-98575-5	ESL-MW-D1-F(0.2)-0214	Dissolved	Water	415.1	
LCS 680-315813/5	Lab Control Sample	Dissolved	Water	415.1	
MB 680-315813/6	Method Blank	Dissolved	Water	415.1	
LCS 680-315813/5	Lab Control Sample	Dissolved	Water	415.1	

#### Analysis Batch: 316243

Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batch
680-98575-1	CPA-MW-2D-0214	Total/NA	Water	325.2	
680-98575-1 MS	CPA-MW-2D-0214	Total/NA	Water	325.2	
680-98575-1 MSD	CPA-MW-2D-0214	Total/NA	Water	325.2	
680-98575-4	ESL-MW-D1-0214	Total/NA	Water	325.2	
LCS 680-316243/20	Lab Control Sample	Total/NA	Water	325.2	
MB 680-316243/21	Method Blank	Total/NA	Water	325.2	

### Analysis Batch: 316246

-	Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batch
-	680-98575-1	CPA-MW-2D-0214	Total/NA	Water	375.4	EL VITTE CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICTOR CONTROL VICT
	680-98575-4	ESL-MW-D1-0214	Total/NA	Water	375.4	
	LCS 680-316246/6	Lab Control Sample	Total/NA	Water	375.4	
	MB 680-316246/23	Method Blank	Total/NA	Water	375.4	

### **QC Association Summary**

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98575-1

SDG: KPS111

### General Chemistry (Continued)

Analysis	Batch:	316597
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ab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
80-98575-1	CPA-MW-2D-0214	Total/NA	Water	415.1	
80-98575-4	ESL-MW-D1-0214	Total/NA	Water	415.1	
.CS 680-316597/5	Lab Control Sample	Total/NA	Water	415.1	
MB 680-316597/2	Method Blank	Total/NA	Water	415.1	

### Analysis Batch: 316851

1	Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batch	
-	680-98575-1	CPA-MW-2D-0214	Total/NA	Water	310.1	***************************************	
	680-98575-4	ESL-MW-D1-0214	Total/NA	Water	310.1		
-	LCS 680-316851/6	Lab Control Sample	Total/NA	Water	310.1		
7	LCSD 680-316851/32	Lab Control Sample Dup	Total/NA	Water	310.1		
-	MB 680-316851/5	Method Blank	Total/NA	Water	310.1		

### Lab Chronicle

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98575-1

SDG: KPS111

Client Sample ID: CPA-MW-2D-0214

Date Collected: 02/12/14 15:10 Date Received: 02/13/14 09:40 Lab Sample ID: 680-98575-1

Matrix: Water

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		250	316403	02/20/14 19:59	MMT	TAL SAV
Total/NA	Prep	3520C			315638	02/14/14 16:00	RBS	TAL SAV
Total/NA	Analysis	8270D		10	315832	02/17/14 14:56	SMC	TAL SAV
Total/NA	Analysis	RSK-175		1	317026	02/25/14 12:38	TAR	TAL SAV
Total Recoverable	Prep	3005A			315521	02/13/14 14:48	BJB	TAL SAV
Total Recoverable	Analysis	6010C		1	315879	02/17/14 00:05	BCB	TAL SAV
Total/NA	Analysis	353.2		1	315605	02/13/14 21:23	GRX	TAL SAV
Total/NA	Analysis	325,2		2	316243	02/18/14 12:41	JME	TAL SAV
Total/NA	Analysis	375.4		2	316246	02/18/14 17:17	JME	TAL SAV
Total/NA	Analysis	415.1		1	316597	02/20/14 00:52	CMP	TAL SAV
Total/NA	Analysis	310.1		1	316851	02/23/14 18:04	LBH	TAL SAV

Client Sample ID: CPA-MW-2D-F(0.2)-0214

Date Collected: 02/12/14 15:10

Date Received: 02/13/14 09:40

Lab Sample ID: 680-98575-2

Matrix: Water

Batch Batch Dilution Batch Prepared Prep Type Туре Method Run Factor Number or Analyzed Analyst Prep Dissolved 3005A 315521 02/13/14 14:48 BJB TAL SAV Dissolved 6010C 315879 02/17/14 00:10 BCB TAL SAV Analysis 1 CMP TAL SAV Dissolved Analysis 415,1 1 315813 02/14/14 15:53

Client Sample ID: CPA-MW-2D-0214-AD

Date Collected: 02/12/14 15:10

Date Received: 02/13/14 09:40

Lab Sample ID: 680-98575-3

Matrix: Water

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Tota!/NA	Analysis	8260B		250	316609	02/21/14 14:33	MMT	TAL SAV
Total/NA	Prep	3520C			315638	02/14/14 16:00	RBS	TAL SAV
Total/NA	Analysis	8270D		10	315832	02/17/14 15:20	SMC	TAL SAV

Client Sample ID: ESL-MW-D1-0214

Date Collected: 02/12/14 11:05

Date Received: 02/13/14 09:40

Lab Sample ID: 680-98575-4

Matrix: Water

	Batch	Batch		Dilution	Batch	Prepared		
Ргер Туре	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		25	316609	02/21/14 14:05	MMT	TAL SAV
Total/NA	Analysis	RSK-175		1	317026	02/25/14 12:51	TAR	TAL SAV
Total Recoverable	Prep	3005A			315521	02/13/14 14:48	BJB	TAŁ SAV
Total Recoverable	Analysis	6010C		1	315879	02/17/14 00:15	BCB	TAL SAV
Total/NA	Analysis	353.2		1	315605	02/13/14 21:26	GRX	TAL SAV
Total/NA	Analysis	325.2		5	316243	02/18/14 13:36	JME	TAL SAV

TestAmerica Savannah

MAR 1 3 2014

### Lab Chronicle

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98575-1

SDG: KPS111

Client Sample ID: ESL-MW-D1-0214

Date Collected: 02/12/14 11:05 Date Received: 02/13/14 09:40 Lab Sample ID: 680-98575-4

Matrix: Water

		Batch	Batch		Dilution	Batch	Prepared		
	Ргер Туре	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
	Total/NA	Analysis	375.4		20	316246	02/18/14 17:39	JME	TAL SAV
	Total/NA	Analysis	415.1		1	316597	02/20/14 01:08	CMP	TAL SAV
-	Total/NA	Analysis	310.1		1	316851	02/23/14 18:12	LBH	TAL SAV

Client Sample ID: ESL-MW-D1-F(0.2)-0214

Date Collected: 02/12/14 11:05

Date Received: 02/13/14 09:40

Lab Sample ID: 680-98575-5

Matrix: Water

	Batch	Batch		Dilution	Batch	Prepared		
Ргер Туре	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Dissolved	Prep	3005A	3330400000000000000000	/-// #5/	315521	02/13/14 14:48	BJB	TAL SAV
Dissolved	Analysis	6010C		1	315879	02/17/14 00:19	BCB	TAL SAV
Dissolved	Analysis	415.1		1	315813	02/14/14 16:35	CMP	TAL SAV

Client Sample ID: 1Q14 LTM Trip Blank #6

Date Collected: 02/12/14 00:00

Date Received: 02/13/14 09:40

Lab Sample ID: 680-98575-6

Matrix: Water

Dilution Batch Batch Batch -Prepared Method Analyst Prep Type Type Run Factor or Analyzed Number Lab Total/NA 8260B 316608 MMT TAL SAV Analysis 02/21/14 15:17

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

### Savannah

5102 LaRoche Avenue

### Chain of Custody Record



Savannah, GA 31404

phone 912.354.7858 fax 912.352.0165																						TestAmerica Labo	ratories, In	ic.
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Preservation Used: 1= Ice, 2= HCi; 3= H2SO4; 4=HNO3; 5=NaO Possible Hazard Identification	ex; b= U	пег	<del></del>	<del></del>												esse	d if s	amni	es an	e rets	ined	l longer than 1 mont	7)	
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### Login Sample Receipt Checklist

Client: Solutia Inc.

Login Number: 98575

Job Number: 680-98575-1

SDG Number: KPS111

List Source: TestAmerica Savannah

List Number: 1

Creator: Banda, Christy S

Greator. Banda, Ginisty 5		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>N/A</td> <td></td>	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
ts the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	·
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	

True

True

N/A



Multiphasic samples are not present.

Residual Chlorine Checked.

Samples do not require splitting or compositing.

### **Certification Summary**

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98575-1

SDG: KPS111

### Laboratory: TestAmerica Savannah

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
	AFCEE		SAVLAB	
A2LA	DoD ELAP		399.01	02-28-15
A2LA	ISO/IEC 17025		399.01	02-28-15
Alabama	State Program	4	41450	06-30-14
Arkansas DEQ	State Program	6	88-0692	01-31-15
California	NELAP	9	3217CA	07-31-14
Colorado	State Program	8	N/A	12-31-14
Connecticut	State Program	1	PH-0161	03-31-15
Florída	NELAP	4	E87052	06-30-14
GA Dept. of Agriculture	State Program	4	N/A	06-30-14
Georgia	State Program	4	N/A	06-30-14
Georgia	State Program	4	803	06-30-14
Guam	State Program	9 ,	09-005r	04-17-14 *
Hawaii	State Program	9	N/A	06-30-14
Illinois	NELAP	5	200022	11-30-14
Indiana	State Program	5	N/A	06-30-14
lowa	State Program	7	353	07-01-15
Kentucky (DW)	State Program	4	90084	12-31-14
Kentucky (UST)	State Program	4	18	06-30-14
Louisiana	NELAP	6	LA100015	12-31-14
Maine	State Program	1	GA00006	08-16-14
Maryland	State Program	3	250	12-31-14
Massachusetts	State Program	1 '	M-GA006	06-30-14
Michigan	State Program	5	9925	06-30-14
Mississippi	State Program	4	N/A	06-30-14
Montana	State Program	8	CERT0081	01-01-15
Nebraska	State Program	7	TestAmerica-Savannah	06-30-14
New Jersey	NELAP	2	GA769	06-30-14
New Mexico	State Program	6	N/A	06-30-14
New York	NELAP	2	10842	03-31-14 *
North Carolina DENR	State Program	4	269	12-31-14
North Carolina DHHS	State Program	4	13701	07-31-14
Oklahoma	State Program	6	9984	08-31-14
Pennsylvania	NELAP	3	68-00474	06-30-14
Puerto Rico	State Program	2	GA00006	12-31-14
South Carolina	State Program	4	98001	06-30-14
Tennessee	State Program	4	TN02961	06-30-14
Texas	NELAP	6	T104704185-08-TX	11-30-14
USDA	Federal		SAV 3-04	04-07-14 *
Virginia	NELAP	3	460161	06-14-14
Washington	State Program	10	C1794	06-10-14
West Virginia DEP	State Program	3	94	06-30-14
West Virginia DHHR	State Program	3	9950C	12-31-14
Wisconsin	State Program	5	999819810	08-31-14
Wyoming	State Program	8	8TMS-L	06-30-14

<sup>\*</sup> Expired certification is currently pending renewal and is considered valid.

# Solutia Krummrich Data Review WGK LTM 1Q14

**Laboratory SDG: KPS112** 

Data Reviewer: Melissa Mansker Peer Reviewer: Elizabeth Kunkel

Date Reviewed: 3/10/2014

Guidance: USEPA National Functional Guidelines for Superfund Organic Methods Data Review 2008. USEPA National Functional Guidelines for Superfund

**Inorganic Data Review 2010** 

Work Plan: Revised Long-Term Monitoring Program (LTMP) Work Plan (Solutia

2009)

Sample Ide	entification
BSA-MW-1S-0214	BSA-MW-1S-F(0.2)-0214
BSA-MW-1S-0214-EB	1Q14 LTM Trip Blank #7

### 1.0 Data Package Completeness

Were all items delivered as specified in the QAPP and COC as appropriate? Yes

### 2.0 Laboratory Case Narrative \ Cooler Receipt Form

Were problems noted in the laboratory case narrative or cooler receipt form?

Yes, the laboratory case narrative indicated sample BSA-MW-1S-0214 and equipment blank BSA-MW-1S-0214-EB were re-extracted for SVOCs outside hold time for extraction. LCS/LCSD recoveries were outside evaluation criteria for 4-chloroaniline and nitrate. The SVOC surrogate recovery for 2-fluorobiphenyl was outside evaluation criteria in the confirmation run of sample BSA-MW-1S-0214. Several VOC internal standards were outside evaluation criteria in sample 1Q14 LTM Trip Blank #7. Samples were diluted due to high levels of benzene and chloride. Instrument calibration was outside evaluation criteria for nitrate in samples BSA-MW-1S-0214. Although not indicated in the laboratory case narrative, VOCs were detected in the equipment blank. These issues are addressed further in the appropriate sections below.

The cooler receipt form indicated that one of three coolers was received by the laboratory at a temperature of 1.8°C which is outside the  $4^{\circ}$ C  $\pm$  2°C criteria. The samples were received in good condition; therefore no qualification of data was required. The cooler receipt form indicated that a pH > 2 for dissolved organic carbon in sample BSA-MW-1S-F(0.2)-0214; please see section 11.0 of this review for qualifications.

### 3.0 Holding Times

Were samples extracted/analyzed within applicable limits?

No, sample BSA-MW-1S-0214 and equipment blank BSA-MW-1S-0214-EB were reextracted for SVOCs three days outside the seven day hold time for extraction due to LCS recoveries outside evaluation criteria in the original analyses/extractions. SVOC data from the original extraction and analysis of BSA-MW-1S-0214 was used to qualify data. No qualification of SVOC data was required based on holding time criteria.

#### 4.0 Blank Contamination

Were any analytes detected in the Method Blanks, Field Blanks or Trip Blanks? Yes

Blank ID	Parameter	Analyte	Concentration/Amount
BSA-MW-1S-0214-EB	VOCs	Chlorobenzene	3.2 ug/L
BSA-MW-1S-0214-EB	VOCs	1,4-Dichlorobenzene	3.4 ug/L

Analytical data that were reported non-detect or at concentrations greater than five times (5X) the associated blank concentration did not required qualification. No qualification of data was required.

### 5.0 Laboratory Control Sample

Were LCS recoveries within evaluation criteria?

No

LCS/LCSD ID	Parameter	Analyte	LCS/LCSD Recovery	RPD	LCS/LCSD/ RPD Criteria
LCS/LCSD 680- 316409/5/6-A	SVOCs	4-Chloroaniline	<b>4</b> /60	173	42-130/50
LCS 680-315764/14	General chemistry	Nitrate	113	NA	90-110

Analytical data reported as non-detect and associated with LCS recoveries above evaluation criteria, indicating a possible high bias, did not require qualification. The compound 4-chloroaniline is not reported for associated samples. No qualification of data was required.

### 6.0 Surrogate Recoveries

Were surrogate recoveries within evaluation criteria?

No

Sample ID	Parameter	Surrogate	Recovery	Criteria
BSA-MW-1S-0214 Run#2	SVOCs	2-Fluorobiphenyl	37	38-130

SVOC data from the original extraction and analysis was used to qualify data. No qualification of SVOC data was required based on surrogate recoveries outside evaluation criteria.

### 7.0 Matrix Spike and Matrix Spike Duplicate Recoveries

Were MS/MSD samples collected as part of this SDG?

No

### 8.0 Internal Standard (IS) Recoveries

Were internal standard area recoveries within evaluation criteria?

No

Sample ID	Parameter	Analyte	IS Area Recovery	IS Criteria
1Q14 LTM Trip Blank #7	VOCs	1,2-Dichloroethane- d <sub>4</sub>	60712	148828-595310
1Q14 LTM Trip Blank #7	VOCs	1,4- Difluorobenzene	129756	336021-1344082
1Q14 LTM Trip Blank #7	VOCs	Chlorobenzene-d <sub>5</sub>	75927	183087-732346

Sample 1Q14 LTM Trip Blank #7 is a quality control sample and is not qualified. No qualification of data was required.

### 9.0 Laboratory Duplicate Results

Were laboratory duplicate samples collected as part of this SDG?

No

### 10.0 Field Duplicate Results

Were field duplicate samples collected as part of this SDG?

No

### 10.0 Sample Dilutions

For samples that were diluted and nondetect, were undiluted results also reported?

Not applicable; analytes were detected in samples that were diluted.

### 11.0 Additional Qualifications

Were additional qualifications applied?

Yes, the following sample is qualified, as summarized below, due to pH > 2.

Sample ID	Parameter	Analyte	Qualification
BSA-MW-1S-F(0.2)-0214	General chemistry	Dissolved organic carbon	J

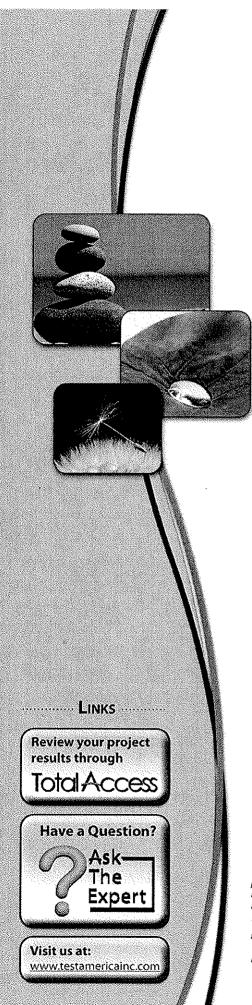
Additionally, the following sample is qualified, as summarized below, due to instrument calibration outside evaluation criteria for nitrate.

Sample ID	Parameter	Analyte	Qualification
BSA-MW-1S-0214	General chemistry	Nitrate	UJ

### SDG KPS112

Results of Samples from Monitoring Well:

BSA-MW-1S



# **TestAmerica**

THE LEADER IN ENVIRONMENTAL TESTING

### **ANALYTICAL REPORT**

TestAmerica Laboratories, Inc. TestAmerica Savannah 5102 LaRoche Avenue Savannah, GA 31404 Tel: (912)354-7858

TestAmerica Job ID: 680-98624-1

TestAmerica Sample Delivery Group: KPS112

Client Project/Site: WGK Long Term Monitoring - 1Q14

For:

Solutia Inc.

575 Maryville Centre Dr. Saint Louis, Missouri 63141

Attn: Mr. Jerry Rinaldi

Michele KKersey

Authorized for release by: 2/28/2014 12:27:43 PM

Michele Kersey, Project Manager I (912)354-7858 michele.kersey@testamericainc.com

Reviewed on MAR 1 0 2014 MM

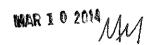
The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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#### **Case Narrative**

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98624-1 SDG: KPS112

KPS112

Job ID: 680-98624-1

Laboratory: TestAmerica Savannah

Narrative

#### **CASE NARRATIVE**

Client: Solutia Inc.

Project: WGK Long Term Monitoring - 1Q14

Report Number: 680-98624-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In the event of interference or analytes present at high concentrations, samples may be diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

#### RECEIPT

The samples were received on 2/14/2014 10:07 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 1.8° C, 2.8° C and 4.4° C.

#### Except:

Method(s) 415.1, SM 5310B: The following sample(s) were collected in properly preserved vials for analysis of volatile organic compounds (VOCs). However, the pH was outside the required criteria when verified by the laboratory, and corrective action was not possible: BSA-MW-01S-F(0.2)-0214 (680-98624-2).

#### **VOLATILE ORGANIC COMPOUNDS (GC-MS)**

Samples BSA-MW-01S-0214 (680-98624-1), BSA-MW-01S-0214-EB (680-98624-3) and 1Q14 LTM Trip Blank #7 (680-98624-4) were analyzed for Volatile Organic Compounds (GC-MS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 02/21/2014 and 02/24/2014.

Sample BSA-MW-01S-0214 (680-98624-1)[10000X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No difficulties were encountered during the volatiles analysis.

All quality control parameters were within the acceptance limits.

#### SEMIVOLATILE ORGANIC COMPOUNDS (AQUEOUS)

Samples BSA-MW-01S-0214 (680-98624-1) and BSA-MW-01S-0214-EB (680-98624-3) were analyzed for Semivolatile Organic Compounds (Aqueous) in accordance with EPA SW-846 Method 8270D. The samples were prepared on 02/20/2014 and 02/24/2014 and analyzed on 02/21/2014 and 02/26/2014.

The following sample(s) contained an allowable number of surrogate compounds outside limits: BSA-MW-01S-0214 (680-98624-1). These results have been reported and qualified.

The laboratory control sample (LCS) for batch 316409 recovered outside control limits for the following analytes: 4-Chloroaniline. The associated sample(s) was re-prepared and/or re-analyzed outside holding time. Both sets of data have been reported.

No other difficulties were encountered during the semivolatiles analysis.

All other quality control parameters were within the acceptance limits.

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TestAmerica Savannah

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#### **Case Narrative**

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98624-1

SDG: KPS112

Job ID: 680-98624-1 (Continued)

Laboratory: TestAmerica Savannah (Continued)

#### **DISSOLVED GASES**

Sample BSA-MW-01S-0214 (680-98624-1) was analyzed for dissolved gases in accordance with RSK-175. The samples were analyzed on 02/25/2014.

No difficulties were encountered during the dissolved gases analysis.

All quality control parameters were within the acceptance limits.

#### METALS (ICP)

Sample BSA-MW-01S-F(0.2)-0214 (680-98624-2) was analyzed for Metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared and analyzed on 02/19/2014.

No difficulties were encountered during the metals analysis.

All quality control parameters were within the acceptance limits.

#### METALS (ICP)

Sample BSA-MW-01S-0214 (680-98624-1) was analyzed for Metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared and analyzed on 02/19/2014.

No difficulties were encountered during the metals analysis.

All quality control parameters were within the acceptance limits.

#### ALKALINITY

Sample BSA-MW-01S-0214 (680-98624-1) was analyzed for alkalinity in accordance with EPA Method 310.1. The samples were analyzed on 02/24/2014.

No difficulties were encountered during the alkalinity analysis.

All quality control parameters were within the acceptance limits.

#### CHLORIDE

Sample BSA-MW-01S-0214 (680-98624-1) was analyzed for Chloride in accordance with EPA Method 325.2. The samples were analyzed on 02/18/2014.

Sample BSA-MW-01S-0214 (680-98624-1)[5X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No difficulties were encountered during the chloride analysis.

All quality control parameters were within the acceptance limits.

#### NITRATE-NITRITE AS NITROGEN

Sample BSA-MW-01S-0214 (680-98624-1) was analyzed for nitrate-nitrite as nitrogen in accordance with EPA Method 353.2. The samples were analyzed on 02/14/2014.

Nitrate as N failed the recovery criteria high for LCS 680-315764/14. Refer to the QC report for details.

No difficulties were encountered during the nitrate-nitrite analysis.

All quality control parameters were within the acceptance limits.

#### SULFATE

Sample BSA-MW-01S-0214 (680-98624-1) was analyzed for sulfate in accordance with EPA Method 375.4. The samples were analyzed on 02/18/2014.

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#### **Case Narrative**

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98624-1

SDG: KPS112

Job ID: 680-98624-1 (Continued)

Laboratory: TestAmerica Savannah (Continued)

No difficulties were encountered during the sulfate analysis.

All quality control parameters were within the acceptance limits.

#### **TOTAL ORGANIC CARBON**

Sample BSA-MW-01S-0214 (680-98624-1) was analyzed for total organic carbon in accordance with EPA Method 415.1. The samples were analyzed on 02/20/2014.

No difficulties were encountered during the TOC analysis.

All quality control parameters were within the acceptance limits.

#### **DISSOLVED ORGANIC CARBON (DOC)**

Sample BSA-MW-01S-F(0.2)-0214 (680-98624-2) was analyzed for Dissolved Organic Carbon (DOC) in accordance with EPA Method 415.1. The samples were analyzed on 02/20/2014.

No difficulties were encountered during the DOC analysis.

All quality control parameters were within the acceptance limits.

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#### Sample Summary

Matrix

Water

Water

Water

Water

Client: Solutia Inc.

Lab Sample ID

680-98624-1

680-98624-2

680-98624-3

680-98624-4

Project/Site: WGK Long Term Monitoring - 1Q14

Client Sample ID

BSA-MW-01S-0214

BSA-MW-01S-F(0.2)-0214

BSA-MW-01S-0214-EB V

1Q14 LTM Trip Blank #7 📝

TestAmerica Job ID: 680-98624-1 SDG: KPS112

Collected	Received
 02/13/14 15:15	02/14/14 10:07
02/13/14 15:15	02/14/14 10:07

02/13/14 13:45

02/13/14 00:00



02/14/14 10:07

02/14/14 10:07



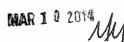












#### **Method Summary**

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98624-1 SDG: KPS112

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL SAV
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	TAL, SAV
RSK-175	Dissolved Gases (GC)	RSK	TAL SAV
6010C	Metals (ICP)	SW846	TAL SAV
310.1	Alkalinity	MCAWW	TAL SAV
325.2	Chloride	MCAWW	TAL SAV
353.2	Nitrogen, Nitrate-Nitrite	MCAWW	TAL SAV
375.4	Sulfate	MCAWW	TAL SAV
415.1	тос	MCAWW	TAL SAV
415.1	DOC	MCAWW	TAL SAV

#### Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

RSK = Sample Prep And Calculations For Dissolved Gas Analysis In Water Samples Using A GC Headspace Equilibration Technique, RSKSOP-175,

Rev. 0, 8/11/94, USEPA Research Lab

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

#### Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

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TestAmerica Savannah

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#### **Definitions/Glossary**

TestAmerica Job ID: 680-98624-1 Client: Solutia Inc. Project/Site: WGK Long Term Monitoring - 1Q14 SDG: KPS112 Qualifiers GC/MS VOA Qualifier Qualifier Description ΰ Indicates the analyte was analyzed for but not detected ISTD response or retention time outside acceptable limits GC/MS Semi VOA Qualifier Qualifier Description Ű Indicates the analyte was analyzed for but not detected Н Sample was prepped or analyzed beyond the specified holding time Х Surrogate is outside control limits LCS or LCSD exceeds the control limits Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value. RPD of the LCS and LCSD exceeds the control limits GC VOA Qualifier Qualifier Description ΪÏ Indicates the analyte was analyzed for but not detected. Metals Qualifier Qualifier Description Indicates the analyte was analyzed for but not detected. **General Chemistry** Qualifier Qualifier Description LCS or LCSD exceeds the control limits ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC exceeds the control limits U indicates the analyte was analyzed for but not detected. Glossary Abbreviation These commonly used abbreviations may or may not be present in this report. Listed under the "D" column to designate that the result is reported on a dry weight basis Percent Recovery CNF Contains no Free Liquid DER Duplicate error ratio (normalized absolute difference) Dil Fac Dilution Factor DL, RA, RE, IN Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample DLC Decision level concentration MDA Minimum detectable activity FDI Estimated Detection Limit MDC Minimum detectable concentration MDL Method Detection Limit Minimum Level (Dioxin) MI NC Not Calculated

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TestAmerica Savannah

Not detected at the reporting limit (or MDL or EDL if shown)

Relative Percent Difference, a measure of the relative difference between two points

Reporting Limit or Requested Limit (Radiochemistry)

Practical Quantitation Limit

Toxicity Equivalent Factor (Dioxin)

Toxicity Equivalent Quotient (Dioxin)

Quality Control

Relative error ratio

ND

PQL

QC

RER

RPD

TEQ

RΙ

#### **Detection Summary**

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98624-1

Lab Sample ID: 680-98624-1

Lab Sample ID: 680-98624-2

Lab Sample ID: 680-98624-3

Lab Sample ID: 680-98624-4

SDG: KPS112

#### Client Sample ID: BSA-MW-01S-0214

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	560000		10000		ug/L	10000		8260B	Total/NA
Methane (TCD)	5900		390		ug/L	1		RSK-175	Total/NA
Iron	10		0,050		mg/L	1		6010C	Total
									Recoverable
Manganese	1.0		0.010		mg/L	1		6010C	Total
						_			Recoverable
Chloride	110		5,0		mg/L	5		325.2	Tota!/NA
Total Organic Carbon	10		1.0		mg/L	1		415.1	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Alkalinity	920		5.0		mg/L	1	Marie.	310.1	Total/NA
Carbon Dioxide, Free	60		5.0		mg/L	1		310.1	Total/NA

#### Client Sample ID: BSA-MW-01S-F(0.2)-0214

Analyte	Result	Qualifier RL	MDL Un	it Dil Fac	D	Method	Prep Type
Iron, Dissolved	10	0.050	mg	y/L 1		6010C	Dissolved
Manganese, Dissolved	1.0	0.010	mg	n/L 1		6010C	Dissolved
Dissolved Organic Carbon	9.8	J 1.0	mg	g/L 1		415.1	Dissolved

#### Client Sample ID: BSA-MW-01S-0214-EB

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chlorobenzene	3.2	***************************************	1.0		ug/L	1		8260B	Total/NA
1,4-Dichlorobenzene	3.4		1.0		ug/L	1		8260B	Total/NA

#### Client Sample ID: 1Q14 LTM Trip Blank #7

No Detections.

MAR 1 0 2014

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98624-1

SDG: KPS112

Client Sample ID: BSA-MW-01S-0214

Date Collected: 02/13/14 15:15 Date Received: 02/14/14 10:07 Lab Sample ID: 680-98624-1

Matrix: Water

Anaiyte	ganic Compounds ( Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Díl Fa
Benzene	560000		10000		ug/L			02/24/14 16:57	1000
Chlorobenzene	10000	IJ	10000		ug/L			02/24/14 16:57	1000
1,2-Dichlorobenzene	10000		10000		ug/L			02/24/14 16:57	1000
1,3-Dichlorobenzene	10000		10000		ug/L			02/24/14 16:57	1000
1,4-Dichlorobenzene	10000		10000		ug/L			02/24/14 16:57	1000
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
4-Bromofluorobenzene	101		70 - 130					02/24/14 16:57	100
Dibromofluoromethane	91		70 - 130					02/24/14 16:57	100
Toluene-d8 (Surr)	99		70 - 130					02/24/14 16:57	100
Method: 8270D - Semivolatil	e Organic Compou	nds (GC/MS	5)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil F
2-Chlorophenol	11	IJ	11		ug/L		02/20/14 14:37	02/21/14 22:55	
1,2,4-Trichlorobenzene	11	U	11		ug/L		02/20/14 14:37	02/21/14 22:55	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil F
2-Fluorobiphenyl	61		38 130				02/20/14 14:37	02/21/14 22:55	
2-Fluorophenol	68		25 130				02/20/14 14:37	02/21/14 22:55	
Nitrobenzene-d5	72		39 - 130				02/20/14 14:37	02/21/14 22:55	
Phenol-d5	. 69		25 - 130				02/20/14 14:37	02/21/14 22:55	
Terphenyl-d14	68		10 - 143				02/20/14 14:37	02/21/14 22:55	
2,4,6-Tribromophenol	93		31 - 141				02/20/14 14:37	02/21/14 22:55	
Method: 8270D - Semivolati	le Organic Compou	nds (GC/MS	S) - RE						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil F
2-Chlorophenoi	9.6	UH	9.6		ug/L	(	02/24/14 15:35	02/26/14 16:01	
1,2,4-Trichlorobenzene	9.6	ยห	9.6		ug/L	_	02/24/14 15:35	02/26/14 16:01	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil I
2-Fluorobiphenyl	€ 37	X	38 - 130				02/24/14 15:35	02/26/14 16:01	
	56		25.130				02/24/14 15:35	02/26/14 16:01	
2-Fluorophenol							02/24/14 15:35	00/06/44 46:04	
•	59		39 130				02/24/14 10.30	02/26/14 16:01	
2-Fluorophenol Nitrobenzene-d5 Phenol-d5	59 59		39 130 25 - 130				02/24/14 15:35	02/26/14 16:01	
Nitrobenzene-d5									
Nitrobenzene-d5 Phenol-d5	59		25 - 130				02/24/14 15:35	02/26/14 16:01	
Nitrobenzene-d5 Phenol-d5 Terphenyl-d14 2,4,6-Tribromophenol	59 76 76		25 - 130 10 - 143				02/24/14 15:35 02/24/14 15:35	02/26/14 16:01 02/26/14 16:01	
Nitrobenzene-d5 Phenol-d5 Terphenyl-d14 2,4,6-Tribromophenol Method: RSK-175 - Dissolve	59 76 76 rd Gases (GC)	Qualifier	25 - 130 10 - 143	MDL	Unit	D	02/24/14 15:35 02/24/14 15:35	02/26/14 16:01 02/26/14 16:01 02/26/14 16:01 Analyzed	Dil I
Nitrobenzene-d5 Phenol-d5 Terphenyl-d14	59 76 76 rd Gases (GC)		25 - 130 10 - 143 31 - 141	MDL	Unit ug/L	D	02/24/14 15:35 02/24/14 15:35 02/24/14 15:35	02/26/14 16:01 02/26/14 16:01 02/26/14 16:01	Dil I
Nitrobenzene-d5 Phenol-d5 Terphenyl-d14 2,4,6-Tribromophenol Method: RSK-175 - Dissolve Analyte	59 76 76 ed Gases (GC) Result	U	25 - 130 10 - 143 31 - 141 RL	MDL		D	02/24/14 15:35 02/24/14 15:35 02/24/14 15:35	02/26/14 16:01 02/26/14 16:01 02/26/14 16:01 Analyzed	Dil I
Nitrobenzene-d5 Phenol-d5 Terphenyl-d14 2,4,6-Tribromophenol Method: RSK-175 - Dissolve Analyte Ethane Ethylene	59 76 76 ed Gases (GC) Result	U	25 - 130 10 - 143 31 - 141 RL	MDL	ug/L	D	02/24/14 15:35 02/24/14 15:35 02/24/14 15:35	02/26/14 16:01 02/26/14 16:01 02/26/14 16:01 Analyzed 02/25/14 14:33	Dil I
Nitrobenzene-d5 Phenol-d5 Terphenyl-d14 2,4,6-Tribromophenol Method: RSK-175 - Dissolve Analyte	59 76 76 ed Gases (GC) Result 1.1 1.0 5900	U	25 - 130 10 - 143 31 - 141 RL 1.1 1.0 390		ug/L ug/L ug/L	D	02/24/14 15:35 02/24/14 15:35 02/24/14 15:35 Prepared	02/26/14 16:01 02/26/14 16:01 02/26/14 16:01 Analyzed 02/25/14 14:33 02/25/14 14:33	
Nitrobenzene-d5 Phenol-d5 Terphenyl-d14 2,4,6-Tribromophenol Method: RSK-175 - Dissolve Analyte Ethane Ethylene Methane (TCD)	59 76 76 76 76 Result 1.1 1.0 5900 P) - Total Recoveral	U	25 - 130 10 - 143 31 - 141 RL 1.1	MDL	ug/L ug/L ug/L	D	02/24/14 15:35 02/24/14 15:35 02/24/14 15:35 Prepared	02/26/14 16:01 02/26/14 16:01 02/26/14 16:01 Analyzed 02/25/14 14:33 02/25/14 14:33 Analyzed	Dif !
Nitrobenzene-d5 Phenol-d5 Terphenyl-d14 2,4,6-Tribromophenol Method: RSK-175 - Dissolve Analyte Ethane Ethylene Wethane (TCD) Method: 6010C - Metals (ICF	59 76 76 76 76 Result 1.1 1.0 5900 P) - Total Recoveral	u u ole	25 - 130 10 - 143 31 - 141 RL 1.1 1.0 390		ug/L ug/L ug/L		02/24/14 15:35 02/24/14 15:35 02/24/14 15:35 Prepared Prepared 02/19/14 09:21	02/26/14 16:01 02/26/14 16:01 02/26/14 16:01 Analyzed 02/25/14 14:33 02/25/14 14:33 02/25/14 14:33 Analyzed 02/19/14 21:07	
Nitrobenzene-d5 Phenol-d5 Terphenyl-d14 2,4,6-Tribromophenol Method: RSK-175 - Dissolve Analyte Ethane Ethylene Methane (TCD) Method: 6010C - Metals (ICF Analyte	59 76 76 76 Result 1.1 1.0 5900 P) - Total Recoveral Result	u u ole	25 - 130 10 - 143 31 - 141 RL 1.1 1.0 390		ug/L ug/L ug/L Unit		02/24/14 15:35 02/24/14 15:35 02/24/14 15:35 Prepared	02/26/14 16:01 02/26/14 16:01 02/26/14 16:01 Analyzed 02/25/14 14:33 02/25/14 14:33 Analyzed	
Nitrobenzene-d5 Phenol-d5 Terphenyl-d14 2,4,6-Tribromophenol  Method: RSK-175 - Dissolve Analyte Ethane Ethylene Methane (TCD)  Method: 6010C - Metals (ICF Analyte	59 76 76 76 76 Result 1.1 1.0 5900 P) - Total Recoveral Result	u u ole	25 - 130 10 - 143 31 - 141 RL 1.1 1.0 390 RL		ug/L ug/L ug/L Unit mg/L		02/24/14 15:35 02/24/14 15:35 02/24/14 15:35 Prepared Prepared 02/19/14 09:21	02/26/14 16:01 02/26/14 16:01 02/26/14 16:01 Analyzed 02/25/14 14:33 02/25/14 14:33 02/25/14 14:33 Analyzed 02/19/14 21:07	

TestAmerica Savannah

AR 1 0 2014 MM

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98624-1

SDG: KPS112

Client Sample ID: BSA-MW-01S-0214

Date Received: 02/14/14 10:07

Date Collected: 02/13/14 15:15

Lab Sample ID: 680-98624-1

Matrix: Water

General Chemistry (Continued) Analyte	Result	Qualifier	RL	MDL	Unit	ם	Prepared	Analyzed	Dil Fac
Nitrate as N	0,050	Un. 112	0.050		mg/L			02/14/14 15:40	1
Sulfate	5,0		5.0		mg/L			02/18/14 16:55	1
Total Organic Carbon	10		1.0		mg/L			02/20/14 D5:07	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	920		5.0		mg/L			02/24/14 17:03	1
Carbon Dioxide, Free	60		5,0		mg/L			02/24/14 17:03	1

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Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98624-1

SDG: KPS112

Client Sample ID: BSA-MW-01S-F(0.2)-0214

Date Collected: 02/13/14 15:15 Date Received: 02/14/14 10:07 Lab Sample ID: 680-98624-2

Matrix: Water

Method: 6010C - Metais (ICP) - Dis	solved								
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	10		0,050		mg/L		02/19/14 09:21	02/19/14 21:11	1
Manganese, Dissolved	1.0		0.010		mg/L		02/19/14 09:21	02/19/14 21:11	1
General Chemistry - Dissolved									
Analyte	Result	Qualifier	RL	MDL	Unit	Ð	Prepared	Analyzed	Dil Fac

Analyte Result Qualifier RL MDL Unit D Prepared Analyzed Dissolved Organic Carbon 9.8 T 1.0 mg/L 02/20/14 17:53

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TestAmerica Savannah

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Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98624-1

SDG: KPS112

Client Sample ID: BSA-MW-01S-0214-EB

Date Collected: 02/13/14 13:45 Date Received: 02/14/14 10:07 Lab Sample ID: 680-98624-3

Matrix: Water

Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
1.0	Ü	1.0		ug/L			02/21/14 20:05	
(3.2)	)	1.0		ug/L			02/21/14 20:05	
1.0	Ű	1.0		ug/L			02/21/14 20:05	
1,0	U	1.0		ug/L			02/21/14 20:05	
3.4	)	1.0		ug/L			02/21/14 20:05	
%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
98		70 - 130				AND THE PROPERTY OF THE PROPER	02/21/14 20:05	
93		70 - 130					02/21/14 20:05	
98		70 - 130					02/21/14 20:05	
Organic Compou	nds (GC/MS	S)						
Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
9.8	Ū	9.8		นg/L		02/20/14 14:37	02/21/14 23:19	
9.8	U	9.8		นg/L		02/20/14 14:37	02/21/14 23:19	
%Recovery	Qualifier	Limits				Prepared	Analyzed	DII F
53		38 - 130				02/20/14 14:37	02/21/14 23:19	
61		25 - 130				02/20/14 14:37	02/21/14 23:19	
58		39 - 130				02/20/14 14:37	02/21/14 23:19	
. 59		25 - 130				02/20/14 14:37	02/21/14 23:19	,
71		10 - 143				02/20/14 14:37	02/21/14 23:19	
67		31 - 141				02/20/14 14:37	02/21/14 23:19	
Organic Compou	nds (GC/MS	S) - RE						
Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil F
9.6	UΗ	9.6		ug/L		02/24/14 15:35	02/26/14 16:25	
9.6	UН	9.6		ug/L	,	02/24/14 15:35	02/26/14 16:25	
%Recovery	Qualifier	Limits				Prepared	Analyzed	DII F
40		38 . 130				02/24/14 15:35	02/26/14 16:25	
64		25 - 130				02/24/14 15:35	02/26/14 16:25	
68		39 - 130				02/24/14 15:35	02/26/14 16:25	
06								
68		25 - 130				02/24/14 15:35	02/26/14 16:25	
	1.0 3.2 1.0 1.0 3.4 %Recovery 98 93 98 Organic Compour Result 9.8 9.8 %Recovery 53 61 58 59 71 67 Organic Compour Result 9.6 9.6 %Recovery 40	%Recovery Qualifier 98 93 98  Organic Compounds (GC/MS Result Qualifier 9.8 U 9.8 U %Recovery Qualifier 53 61 58 59 71 67  Organic Compounds (GC/MS Result Qualifier 9.6 UH 9.6 UH %Recovery Qualifier 9.6 UH 9.6 UH	1.0 U 1.0 3.2 1.0 1.0 U 1.0 1.0 U 1.0 3.4 1.0  **Recovery Qualifier Limits 98 70 - 130 93 70 - 130 98 70 - 130  Organic Compounds (GC/MS) Result Qualifier RL 9.8 U 9.8 9.8 U 9.8  **Recovery Qualifier Limits 53 38 - 130 61 25 - 130 58 39 - 130 59 25 - 130 71 10 - 143 67 31 - 141  Organic Compounds (GC/MS) - RE Result Qualifier RL 9.6 UH 9.6 9.6 UH 9.6  **Recovery Qualifier Limits 10 - 143 11 - 141  **Corganic Compounds (GC/MS) - RE Result Qualifier RL 9.6 UH 9.6 9.6 UH 9.6 9.6 UH 9.6	1.0 U 1.0 3.2 1.0 1.0 U 1.0 1.0 U 1.0 1.0 U 1.0 3.4 1.0  **Recovery Qualifier Limits 98 70 - 130 98 70 - 130  Organic Compounds (GC/MS) Result Qualifier RL MDL 9.8 U 9.8 9.8 U 9.8  **Recovery Qualifier Limits 53 38 - 130 61 25 - 130 58 39 - 130 59 25 - 130 71 10 - 143 67 31 - 141  Organic Compounds (GC/MS) - RE Result Qualifier RL MDL 9.6 UH 9.6 9.6 UH 9.6  **Recovery Qualifier Limits 40 38 - 130	1.0 U   1.0   ug/L     3.2   1.0   ug/L     1.0 U   1.0   ug/L     1.0 U   1.0   ug/L     3.4   1.0   ug/L     3.4   1.0   ug/L     3.4   1.0   ug/L     3.4   1.0   ug/L     3.4   1.0   ug/L     3.4   1.0   ug/L     3.4   1.0   ug/L     3.4   1.0   ug/L     98   70.130     99   70.130     98   70.130     98   70.130     98   0   9.8   ug/L     9.8 U   9.8   ug/L     9.8 U   9.8   ug/L     9.8 U   9.8   ug/L     9.8 U   9.8   ug/L     10.143     67   31.141     Organic Compounds (GC/MS) - RE     Result   Qualifier   RL   MDL   Unit     9.6   UH   9.6   ug/L     9.6   UH   9.6   ug/L     40   38.130     %Recovery   Qualifier   Limits     40   38.130     %Recovery   Qualifier   Limits     40   38.130	1.0 U	1.0 U	1.0 U

MAR 1 0 2014

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98624-1

SDG: KPS112

Client Sample ID: 1Q14 LTM Trip Blank #7

Date Collected: 02/13/14 00:00 Date Received: 02/14/14 10:07 Lab Sample ID: 680-98624-4

Matrix: Water

Method: 8260B - Volatile Or	ganic Compounds (	(GC/MS)						
Analyte	Result	Qualifier	RL.	MDL Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U·	1.0	ug/L			02/24/14 16:14	1
Chlorobenzene	1.0	U *	1.0	ug/L			02/24/14 16:14	1
1,2-Dichlorobenzene	1.0	U*	1.0	ug/L			02/24/14 16:14	1
1,3-Dichlorobenzene	1.0	U.	1.0	ug/L			02/24/14 16:14	1
1,4-Dichlorobenzene	1.0	U*	1.0	ug/L			02/24/14 16:14	1,
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	99	*	70 - 130		-		02/24/14 16:14	1
Dibromofluoromethane	87	*	70 - 130				02/24/14 16:14	1
Toluene-d8 (Surr)	92	•	70 - 130				02/24/14 16:14	1

MAR 1 0 2014

#### **Surrogate Summary**

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98624-1

SDG: KPS112

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

				Percent Sur
		BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	(70-130)
680-98624-1	BSA-MW-01S-0214	101	91	99
680-98624-3	BSA-MW-01S-0214-EB	98	93	98
680-98624-4	1Q14 LTM Trip Blank #7	99*	87 *	92 *
LCS 680-316608/5	Lab Control Sample	112	92	108
LCS 680-316857/4	Lab Control Sample	100	87	103
LCS 680-316858/4	Lab Control Sample	95	87	93
LCSD 680-316608/9	Lab Control Sample Dup	99	89	101
LCSD 680-316857/5	Lab Control Sample Dup	105	89	107
LCSD 680-316858/5	Lab Control Sample Dup	98	88	99
MB 680-316608/7	Method Blank	98	97	97
MB 680-316857/8	Method Blank	100	94	96
MB 680-316858/8	Method Blank	94	95	90
Surrogate Legend				

BFB = 4-Bromofluorobenzene

DBFM = Dibromofluoromethane

TOL = Toluene-d8 (Surr)

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Prep Type: Total/NA Matrix: Water

				Percent Sur	rogate Reco	very (Accepta	ance Limits
		FBP	2FP	NBZ	PHL	TPH	TBP
ab Sample ID	Client Sample ID	(38-130)	(25-130)	(39-130)	(25-130)	(10-143)	(31-141)
30-98624-1	BSA-MW-01S-0214	61	68	72	69	68	93
30-98624-1 - RE	BSA-MW-01S-0214	37 X	56	59	59	76	76
30-98624-3	BSA-MW-01S-0214-EB	53	61	58	59	71	67
30-98624-3 - RE	BSA-MW-01S-0214-EB	40	64	68	68	84	74
S 680-316409/5-A	Lab Control Sample	76	71	79	63	85	89
S 680-316953/6-A	Lab Control Sample	71	63	67	63	77	75
SD 680-316409/6-A	Lab Control Sample Dup	81	69	73	66	82	91
SD 680-316953/7-A	Lab Control Sample Dup	79	73	79	72	87	87
3 680-316409/4-A	Method Blank	81	78	88	77	100	89
B 680-316953/5-A	Method Blank	70	68	73	73	88	70

Surrogate Legend

FBP = 2-Fluorobiphenyl

2FP = 2-Fluorophenol

NBZ = Nitrobenzene-d5

PHL = Phenof-d5

TPH ≈ Terphenyl-d14

TBP ≈ 2,4,6-Tribromophenol

TestAmerica Savannah

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Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98624-1

SDG: KPS112

#### Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 680-316608/7

Matrix: Water

Analysis Batch: 316608

Client San	ple ID: Method Blank	
	Prep Type: Total/NA	

·	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	Ū	1.0	***************************************	ug/L			02/21/14 11:55	1
Chlorobenzene	1.0	υ	1.0		ug/L			02/21/14 11:55	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			02/21/14 11:55	1
1,3-Dichlorobenzene	1.0	υ	1.0		ug/L			02/21/14 11:55	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			02/21/14 11:55	1

1,4-Dichlorobenzene	1.0	U	1.0	ug/L		02/21/14 11:55	1
	мв	MB					
Surrogate	%Recovery	Qualifier	Limits		Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	98		70 - 130			02/21/14 11:55	1
Dibromofluoromethane	97		70 - 130			02/21/14 11:55	1
Toluene-d8 (Surr)	97		70 - 130			02/21/14 11:55	1

Lab Sample ID: LCS 680-316608/5

Matrix: Water

Analysis Batch: 316608

Client Sample ID: Lab Control Sample Prep Type: Total/NA

		Spike	LCS	LCS			%Rec.	
	Analyte	Added	Result	Qualifier Unit	Ð	%Rec	Limits	
	Benzene	50.0	53.3	ug/L		107	74 - 123	
	Chiorobenzene	50.0	51,2	ug/L		102	79 - 120	
	1,2-Dichlorobenzene	50.0	55.5	ug/L	.*	111	77 - 124	•
	1,3-Dichlorobenzene	50.0	56.6	ug/L		113	79 - 123	
	1,4-Dichtorobenzene	50.0	54.1	ug/L		108	76 - 124	
i								

	LCS	LCS	
Surrogate	%Recovery		Limits
4-Bromofluorobenzene	112		70_130
Dibromofluoromethane	92		70 - 130
Taluene-d8 (Surr)	108		70 - 130

Lab Sample ID: LCSD 680-316608/9

Matrix: Water

Analysis Batch: 316608

Client Sample ID: Lab Control Sample Dup Prep Type: Total/NA

•	Spike	LCSD	LCSD				%Rec.		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	50.0	50.9		ug/L		102	74 - 123	5	30
Chlorobenzene	50.0	46.4		ug/L		93	79 - 120	10	30
1,2-Dichlorobenzene	50.0	48.3		ug/L		97	77 - 124	14	30
1,3-Dichlorobenzene	50,0	49.2		ug/L		98	79 . 123	14	30
1,4-Dichlorobenzene	50.0	48.2		ug/L		96	76 - 124	12	30

	L <b>C</b> \$D	LCSD	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene	99		70 - 130
Dibromofluoromethane	89		70 - 130
Toluene-d8 (Surr)	101		70 <sub>-</sub> 130

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98624-1

SDG: KPS112

#### Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

96

Lab Sample ID: MB 680-316857/8

Matrix: Water

Analysis Batch: 316857

Client Sample ID: Method Blank
Prep Type: Total/NA

	MB	MB							
Analyte	Result	Qualifier	RL	MÐL	Unit	Ð	Prepared	Analyzed	Dil Fac
Benzene	1.0	Ų	1.0		ug/L	 	**************************************	02/24/14 12:08	1
Chlorobenzene	1.0	U	1.0		ug/L			02/24/14 12:08	1
1,2-Dichlorobenzene	1.0	ប	1.0		ug/L			02/24/14 12:08	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			02/24/14 12:08	1
1,4-Dichlorobenzene	1.0	υ	1,0		ug/L			02/24/14 12:08	1

MB MB %Recovery Qualifier Limits Prepared Analyzed Dil Fac 70 - 130 100 02/24/14 12:08 94 70 - 130 02/24/14 12:08

Lab Sample ID: LCS 680-316857/4

Matrix: Water

Surrogate

4-Bromofluorobenzene

Dibromofluoromethane

Toluene-d8 (Surr)

Analysis Batch: 316857

Client Sample ID: Lab Control Sample Prep Type: Total/NA

02/24/14 12:08

	Spike	LCS	LC <b>S</b>			%Rec.
Analyte	Added	Result	Qualifier Unit	Đ	%Rec	Limits
Benzene	50.0	49.7	ug/L		99	74 - 123
Chlorobenzene	50.0	47.B	ug/L		96	79 - 120
1,2-Dichlorobenzene	. 50.0	49.5	ug/L		99	77 - 124
1,3-Dichlorobenzene	50.0	50.1	ug/L		100	79 - 123
1,4-Dichlorobenzene	50.0	48,8	ug/L		98	76 - 124

70 - 130

LCS LCS Surrogate Qualifier Limits %Recovery 4-Bromofluorobenzene 100 70 - 130 Dibromofluoromethane 87 70 - 130 Toluene-d8 (Surr) 103 70.130

Lab Sample ID: LCSD 680-316857/5

Matrix: Water

Analysis Batch: 316857

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

	Spike	LCSD	LCSD			%Rec.		RPD
Analyte	Added	Result	Qualifier Ur		%Rec	Limits	RPD	Limit
Benzene	50.0	53.5	กดี	/L	107	74 - 123	7	30
Chlorobenzene	50.0	48.6	ug	/L	97	79 _ 120	2	30
1,2-Dichlorobenzene	50.0	51.3	ug	<i>I</i> L	103	77 - 124	4	30
1,3-Dichlorobenzene	50.0	53.0	ug	/L	106	79 - 123	6	30
1,4-Dichlorobenzene	50.0	51.2	ug	/L	102	76 . 124	5	30

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene	105		70 - 130
Dibromofluoromethane	89		70 - 130
Toluene-d8 (Surr)	107		70 - 130

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98624-1

SDG: KPS112

#### Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 680-316858/8

Matrix: Water

Client Sample ID: Method Blank
Prep Type: Total/NA

Analysis Batch: 316858

	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0		ug/L			02/24/14 12:23	1
Chlorobenzene	1.0	U	1.0		ug/L			02/24/14 12:23	1
1,2-Dichtorobenzene	1.0	U	1.0		ug/L			02/24/14 12;23	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			02/24/14 12:23	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			02/24/14 12:23	1
	МВ	MB							
Surrogate	%Recovery	Qualifier	i imits				Prepared	Analyzed	Dil Fac

 Surrogate
 %Recovery
 Qualifier
 Limits
 Prepared
 Analyzed
 Dil Fac

 4-Bromofluorobenzene
 94
 70 - 130
 02/24/14 12:23
 1

 Dibromofluoromethane
 95
 70 - 130
 02/24/14 12:23
 1

 Toluene-d8 (Surr)
 90
 70 - 130
 02/24/14 12:23
 1

Lab Sample ID: LCS 680-316858/4

Matrix: Water

Analysis Batch: 316858

ampi	ent Sam	mple	ID: La	b Contro	l Sample	•	ě
			Pre	p Type:	Total/NA		10000
			%Rec.			6.70	000000

Analyte Added Result Qualifier Unit %Rec Limits Benzene 50.0 49.3 99 74 - 123 ug/L Chlorobenzene 79 - 120 50.0 44.5 ug/L 89 77 - 124 1,2-Dichlorobenzene 50.0 44.6 ug/L 89 1,3-Dichlorobenzene 50.0 46.9 ug/L 94 79 - 123 1,4-Dichlorobenzene 76 - 124 50.0 43.6 ug/L

 Surrogate
 %Recovery
 Qualifier
 Limits

 4-Bromofluorobenzene
 95
 70 - 130

 Dibromofluoromethane
 87
 70 - 130

 Toluene-d8 (Surr)
 93
 70 - 130

Lab Sample ID: LCSD 680-316858/5

Matrix: Water

Analysis Batch: 316858

Client Sample ID: Lab	Control Sample Dup
	Prep Type: Total/NA

Analysis Batch: 310000									
	Spike	LCSD	LĊSD				%Rec.		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	50.0	53.7		ug/L		107	74 - 123	9	30
Chlorobenzene	50.0	47.5		ug/L		95	79 - 120	6	30
1,2-Díchlorobenzene	50.0	46.4		ug/L		93	77 - 124	4	30
1,3-Dichlorobenzene	50.0	47.1		ug/L		94	79 - 123	0	30
1,4-Dichlorobenzene	50.0	47.4		ug/L		95	76 - 124	8	30

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene	98		70 - 130
Dibromofluoromethane	88		70 - 130
Toluene-d8 (Surr)	99		70 - 130

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Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98624-1

SDG: KPS112

#### Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 680-316409/4-A

Lab Sample ID: LCS 680-316409/5-A

Lab Sample ID: LCSD 680-316409/6-A

Matrix: Water

Matrix: Water

Matrix: Water

Analysis Batch: 316726

Analysis Batch: 317112

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 316409

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Chlorophenol	10	U	10		ug/L		02/20/14 14:37	02/25/14 14:29	1
1,2,4-Trichlorobenzene	10	U	10		ug/L		02/20/14 14:37	02/25/14 14:29	1

	MB	WB				
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	81		38 - 130	02/20/14 14:37	02/25/14 14:29	1
2-Fluorophenol	78		25 - 130	02/20/14 14:37	02/25/14 14:29	1
Nitrobenzene-d5	88		39 - 130	02/20/14 14:37	02/25/14 14:29	1
Phenol-d5	77		25 - 130	02/20/14 14:37	02/25/14 14:29	1
Terphenyl-d14	100		10 - 143	02/20/14 14:37	02/25/14 14:29	1
2,4,6-Tribromophenol	89		31 - 141	02/20/14 14:37	02/25/14 14:29	1
·						

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 316409

	Spike	LCS	LCS			%Rec.	
Analyte	Added	Result	Qualifiar	Unit	%Ree	Limits	
4-Chloroaniline	100	4.41	l.	ug/L	 (4)	42 - 130	
2-Chlorophenol	100	75.4		ug/L	75	57 - 130	
1,4-Dioxane	100	62.8		ug/L	63	35 - 130	
1,2,4-Trichtorobenzene	100	60.3		ug/L	60	42 - 130	

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
2-Fluorobiphenyl	76		38 - 130
2-Fluorophenol	71		25 - 130
Nitrobenzene-d5	79		39 - 130
Phenoi-d5	63		25 - 130
Terphenyl-d14	85		10 - 143
2,4,6-Tribromophenol	89		31 - 141

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 316409

Analysis Batch: 316726 Spike LCSD LCSD %Rec. RPD %Rec Limits Analyte Result Qualifier Unit Limit Added 60.0 60 42 - 130 50 4-Chloroaniline 100 ug/L 2-Chlorophenol 100 71.4 ug/L 71 57.130 50 1,4-Dioxane 100 63.4 ug/L 35 - 130 50 1,2,4-Trichlorobenzene 100 54.1 ug/L 42 - 130 11 50

LCSD LCSD

Surrogate	%Recovery	Qualifier	Limits
2-Fluorobiphenyl	81		38 - 130
2-Fluorophenol	69		25 - 130
Nitrobenzene-d5	73		39 - 130
Phenol-d5	66		25 - 130
Terphenyl-d14	82		10 - 143
2,4,6-Tribromophenol	91		31 - 141

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98624-1

SDG: KPS112

#### Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 680-316953/5-A

Matrix: Water

Analysis Batch: 317351

Client Sample ID: Method Blank Prep Type: Total/NA

Prep Batch: 316953

÷		1110	1110							
-	Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
-	2-Chlorophenol	10	ΰ	10		ug/L		02/24/14 15:35	02/26/14 14:24	1
	1,2,4-Trichlorobenzene	10	U	10		ug/L		02/24/14 15:35	02/26/14 14:24	1
- 3										

MR MR

MR MR

•	1110 1110				
Surrogate	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	70	38 - 130	02/24/14 15:35	02/26/14 14:24	
2-Fluorophenol	68	25 - 130	02/24/14 15:35	02/26/14 14:24	1
Nitrobenzene-d5	73	39 _ 130	02/24/14 15:35	02/26/14 14:24	1
Phenol-d5	73	25 - 130	02/24/14 15:35	02/26/14 14:24	1
Terphenyl-d14	88	10 - 143	02/24/14 15:35	02/26/14 14:24	1
2,4,6-Tribromophenol	70	31 - 141	02/24/14 15:35	02/26/14 14:24	1
S. com					

Lab Sample ID: LCS 680-316953/6-A

Matrix: Water

Analysis Batch: 317351

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 316953

		Spike	LCS	LCS				%Rec.		
Analyte		Added	Result	Qualifier	Unit	D	%Rec	Limits		
4-Chloroaniline		100	54.9	*	ug/L	***	55	42 - 130	**************************************	/A00744100000
2-Chlorophenol		100	69.5		ug/L		70	57 - 130		
1.4-Dioxane	•	100	57.7		ug/L		58	35 _ 130		
1.2.4-Trichlorobenzene		100	49.6		ua/L		50	42 - 130		

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
2-Fluorobiphenyl	71		38 - 130
2-Fluorophenol	63		25 <sub>-</sub> 130
Nitrobenzene-d5	67		39 - 130
Phenol-d5	63		25 - 130
Terphenyl-d14	77		10 - 143
2,4,6-Tribromophenol	75		31 - 141

Lab Sample ID: LCSD 680-316953/7-A

Matrix: Water

Analysis Batch: 317351

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 316953

1		Spike	LCSD	LCSD				%Rec.		RPD
***************************************	Analyte	Added	Result	Qualifier (	Unit	D	%Rec	Limits	RPD	Limit
	4-Chloroaniline	100	56.5	(	ug/L		56	42 - 130	3	50
	2-Chlorophenol	100	81.4	{	ug/L		81	57 - 130	16	50
	1,4-Dioxane	100	64.1	ı	ug/L		64	35 - 130	10	50
	1,2,4-Trichlorobenzene	100	59.1	{	ug/L		59	42 - 130	18	50

LCSD LCSD

Surrogate	%Recovery	Qualifier	Limits
2-Fluorobiphenyl	79		38 - 130
2-Fluorophenol	73		25 - 130
Nitrobenzene-d5	79		39 - 130
Phenol-d5	72		25 - 130
Terphenyl-d14	87		10 - 143
2,4,6-Tribromophenol	87		31 - 141

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98624-1

SDG: KPS112

#### Method: RSK-175 - Dissolved Gases (GC)

Client Sample ID: Method Blank Lab Sample ID: MB 680-317026/8 Prep Type: Total/NA Matrix: Water

Analysis Batch: 317026

ì		MB	MB								
į	Analyte	Result	Qualifier	RL	MDL	Unit		D	Prepared	Analyzed	Dil Fac
	Ethane	1.1	Ū	1.1	,	ug/L	L. L. L. L. C. C. C. C. C. C. C. C. C. C. C. C. C.			02/25/14 11:41	1
***************************************	Ethylene	1.0	U	1.0		ug/L				02/25/14 11:41	1
	Methane	0.58	U	0.58		ug/L				02/25/14 11:41	1
	Methane (TCD)	390	U	390		ug/L				02/25/14 11:41	1

Lab Sample ID: LCS 680-317026/4 Client Sample ID: Lab Control Sample Matrix: Water Prep Type: Total/NA

Analysis Batch: 317026

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Ethane	288	264		ug/L		91	75 - 125	 Inches and the second
Ethylene	269	254		ug/L		94	75 - 125	
Methane	154	131		ug/L		85	75 - 125	

Lab Sample ID: LCS 680-317026/5 Client Sample ID: Lab Control Sample Matrix: Water Prep Type: Total/NA

Analysis Batch: 317026

	rinal, old Battin o ri cae										
200	-		Spike	LCS	LCS				%Rec.		
4	Analyte		Added	Result	Qualifier	Unit	D	%Rec	Limits		
	Methane (TCD)	***************************************	 1920	1460	•	ug/L		77	75 - 125	***************************************	***************************************

Lab Sample ID: LCSD 680-317026/6 Client Sample ID: Lab Control Sample Dup Matrix: Water Prep Type: Total/NA Analysis Batch: 317026

Spike LCSD LCSD %Rec. RPD Analyte Added Result Qualifier Unit %Rec Limits Limit 1870 75.125 Methane (TCD) 1920 ug/L 30

Lab Sample ID: LCSD 680-317026/7 Client Sample ID: Lab Control Sample Dup Matrix: Water Prep Type: Total/NA

Analysis Batch: 317026

-	•	Spike	LCSD	LCSD				%Rec.		RPD
-	Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
A CONTRACTOR	Ethane	288	275		ug/L		95	75 - 125	4	30
	Ethylene	269	260		ug/L		97	75 - 125	2	30
	Methane	154	137		ug/L		89	75 - 125	4	30

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 680-316214/1-A Client Sample ID: Method Blank Prep Type: Total Recoverable Matrix: Water Prep Batch: 316214 Analysis Batch: 316419

	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.050	U	0,050		mg/L		02/19/14 09:21	02/19/14 20:00	1
Iron, Dissolved	0.050	U	0.050		mg/L		02/19/14 09:21	02/19/14 20:00	1
Manganese	0.010	U	0.010		mg/L		02/19/14 09:21	02/19/14 20:00	1
Manganese, Dissolved	0.010	U	0.010		mg/L		02/19/14 09:21	02/19/14 20:00	1

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98624-1

Client Sample ID: Method Blank

Prep Type: Total/NA

SDG: KPS112

Method: 6010C - Metals	(ICP)	(Continued)

	Lab Sample ID: LCS 680-316214/2-A	Client Sample ID: Lab Control Sample							
	Matrix: Water		Prep Type: Total Recoverable						
-	Analysis Batch: 316419							Prep i	Batch: 316214
i		Spike	LCS	LCS				%Rec.	
	Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
-	Iron	5.00	5,15	,	mg/L		103	75 - 125	Participation of the Participa
	Iron, Dissolved	5.00	5.15		mg/L		103	75 - 125	
	Manganese	0.500	0.536		mg/L		107	75 - 125	
ı,	Manganese, Dissolved	0.500	0,536		mg/L		107	75 - 125	

#### Method: 310.1 - Alkalinity

Matrix: Water

Lab Sample ID: MB 680-317049/5

Analysis Batch: 317049									
	MB	MB							
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	5,0	Ü	5.0		mg/L			02/24/14 16:36	1
Carbon Dioxide, Free	5.0	U	5.0		mg/L			02/24/14 16:36	1
Lab Sample ID: LCS 680-317049/6						CI	ient Sample	ID: Lab Control	Sample
Matrix: Water								Prep Type: T	otal/NA

1	Analysis Batch: 317049								
2		Spike	LÇS	LCS				%Rec.	
400	Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
	Alkalinity	250	223		mg/L	****	89	80 - 120	 

1	_ab Sample ID: LCSD 680-317049/32			Client Sample ID: Lab Control Sample Du						
-	Matrix: Water							Prep 1	Гуре: То	tal/NA
1	Analysis Batch: 317049									
2		Spike	LCSD	LCSD				%Rec.		RPD
100	Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
-	Alkalinity	250	241		mg/L		96	80 - 120	8	30

#### Method: 325.2 - Chloride

Lab Sample ID: MB 680-316243/21 Matrix: Water Analysis Batch: 316243							Client Sa	ample ID: Metho Prep Type: 1	
•	MB	МВ							
Analyte	Resuit	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1.0	Ū	1.0		mg/L			02/18/14 12:52	1
Lab Sample ID: LCS 680-316243/20 Matrix: Water						CI	ient Sample	ID: Lab Control Prep Type: 1	•

Lab Sample ID: LCS 680-316243/20				G	ient :	Sample	EID: Lab Ce	ontroi Sampie
Matrix: Water							Prep T	ype: Totał/NA
Analysis Batch: 316243								
	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Chloride	25.0	25,8		mg/L	**	103	85 - 115	

TestAmerica Job ID: 680-98624-1 Client: Solutia Inc. SDG: KPS112 Project/Site: WGK Long Term Monitoring - 1Q14 Method: 353.2 - Nitrogen, Nitrate-Nitrite Client Sample ID: Method Blank Lab Sample ID: MB 680-315764/13 Prep Type: Total/NA Matrix: Water Analysis Batch: 315764 мв мв Analyzed Dil Fac Analyte Result Qualifier RL MOL Unit Prepared Nitrate as N 0.050 U^ 0.050 mg/L 02/14/14 15:31 Client Sample ID: Lab Control Sample Lab Sample ID: LCS 680-315764/14 Prep Type: Total/NA Matrix: Water Analysis Batch: 315764 %Rec LCS LCS Spike Limits Analyte Added Result Qualifier Unit %Red Nitrate as N 0.500 0,565 mg/L 113 90 \_ 110 107 90 - 110 Nitrate Nitrite as N 1.00 1.07 mg/L 100 90 - 110 Nitrite as N 0.500 0.502 mg/L Method: 375.4 - Sulfate Lab Sample ID: MB 680-316246/23 Client Sample ID: Method Blank Prep Type: Total/NA Matrix: Water Analysis Batch: 316246 мв мв RL Analyzed Dil Fac Result Qualifier MDL Unit Prepared Analyte mg/L 02/18/14 17:15 Sulfate 5.0 U 5.0 Client Sample ID: Lab Control Sample Lab Sample ID: LCS 680-316246/6 Matrix: Water Prep Type: Total/NA Analysis Batch: 316246 Spike LCS LCS %Rec. %Rec Limits Analyte Added Result Qualifier Unit 100 Sulfate 20.0 19.9 mg/L Method: 415.1 - DOC Lab Sample ID: MB 680-316600/85 Client Sample ID: Method Blank Matrix: Water Prep Type: Dissolved Analysis Batch: 316600 MB MB Result Qualifier RL MDL Unit Prepared Analyzed Dil Fac 1.0 U 1.0 mg/L 02/20/14 15:52 Dissolved Organic Carbon Client Sample ID: Lab Control Sample Lab Sample ID: LCS 680-316600/84 Matrix: Water Prep Type: Dissolved Analysis Batch: 316600 %Rec. Spike LCS LCS Added Result Qualifier Unit %Rec Limits

MAR 1 0 2014

TestAmerica Savannah

104

80 - 120

20.0

Dissolved Organic Carbon

20.8

mg/L

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98624-1

Client Sample ID: Method Blank

SDG: KPS112

Method: 415.1 - TOC

Lab Sample ID: MB 680-316598/26

Matrix: Water

Analysis Batch: 316598

мв мв

Analyte Result Qualifier

Total Organic Carbon 1.0 U

RL 1.0 MDL Unit mg/L Prepared

Analyzed 02/20/14 00:21

Prep Type: Total/NA

Prep Type: Total/NA

Dil Fac

Lab Sample ID: LCS 680-316598/33

Matrix: Water

Analysis Batch: 316598

Total Organic Carbon

Analyte

Spike Added 20.0

LCS LCS Result Qualifier 20.7

Unit mg/L

104

Limits 80 - 120

Client Sample ID: Lab Control Sample

%Rec.

#### **QC Association Summary**

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98624-1 SDG: KPS112

Analysis Batch: 31660	8				
Lab Campia ID		Pron Tuno	Matrix	Method	Prep Batch
Lab Sample ID 680-98624-3	Client Sample ID BSA-MW-01S-0214-EB	Prep Type Total/NA	Water	8260B	Piep Baici
LCS 680-316608/5		Total/NA	Water	8260B	
	Lab Control Sample	Total/NA	Water	8260B	
LCSD 680-316608/9 MB 680-316608/7	Lab Control Sample Dup  Method Blank	Total/NA	Water	8260B	
		· stanni			
nalysis Batch: 31685	7				
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batcl
680-98624-1	BSA-MW-01S-0214	Total/NA	Water	8260B	
LCS 680-316857/4	Lab Control Sample	Total/NA	Water	8260B	
LCSD 680-316857/5	Lab Control Sample Dup	Total/NA	Water	8260B	
MB 680-316857/8	Method Blank	Total/NA	Water	8260B	
nalysis Batch: 31685	8				
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-98624-4	1Q14 LTM Trip Blank #7	Total/NA	Water	8260B	
LCS 680-316858/4	Lab Control Sample	Total/NA	Water	8260B	
LCSD 680-316858/5	Lab Control Sample Dup	Total/NA	Water	8260B	
MB 680-316858/8	Method Blank	Total/NA	Water	8260B	
rep Batch: 316409	·				
Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batc
680-98624-1	BSA-MW-01S-0214	Total/NA	Water	3520C	
680-98624-3	BSA-MW-01S-0214-EB	Total/NA	Water	3520C	
LCS 680-316409/5-A	Lab Control Sample				
		Total/NA	Water	3520C	
	Lab Control Sample Dup	Total/NA	Water	3520C	
LCSD 680-316409/6-A MB 680-316409/4-A	Lab Control Sample Dup Method Blank				
MB 680-316409/4-A	Method Blank	Total/NA	Water	3520C	
MB 680-316409/4-A nalysis Batch: 31672	Method Blank	Total/NA	Water	3520C	Prep Batc
MB 680-316409/4-A .nalysis Batch: 31672 Lab Sample ID	Method Blank	Total/NA Total/NA	Water Water	3520C . 3520C	<del>-</del>
MB 680-316409/4-A nalysis Batch: 31672 Lab Sample ID 680-98624-1	Method Blank 26 Client Sample ID	Total/NA Total/NA Prep Type	Water Water Matrix	3520C . 3520C Method	31640
MB 680-316409/4-A nalysis Batch: 31672 Lab Sample ID 680-98624-1 680-98624-3	Method Blank  Client Sample ID  BSA-MW-01S-0214	Total/NA Total/NA  Prep Type Total/NA	Water Water  Matrix Water	3520C 3520C Method 8270D	31640 31640
MB 680-316409/4-A nalysis Batch: 31672 Lab Sample ID 680-98624-1 680-98624-3	Method Blank  Client Sample ID  BSA-MW-01S-0214  BSA-MW-01S-0214-EB	Total/NA Total/NA Prep Type Total/NA Yotal/NA	Water Water  Matrix Water Water	3520C 3520C Method 8270D 8270D	31640 31640 31640
MB 680-316409/4-A  nalysis Batch: 31672  Lab Sample ID  680-98624-1  680-98624-3  LCS 680-316409/5-A  LCSD 680-316409/6-A	Method Blank  Client Sample ID  BSA-MW-01S-0214  BSA-MW-01S-0214-EB  Lab Control Sample	Total/NA Total/NA  Prep Type Total/NA Total/NA Total/NA	Water Water  Matrix Water Water Water Water	3520C 3520C Method 8270D 8270D 8270D	31640 31640 31640
MB 680-316409/4-A  nalysis Batch: 31672  Lab Sample ID  680-98624-1  680-98624-3  LCS 680-316409/5-A  LCSD 680-316409/6-A  rep Batch: 316953	Method Blank  Client Sample ID  BSA-MW-01S-0214  BSA-MW-01S-0214-EB  Lab Control Sample	Total/NA Total/NA  Prep Type Total/NA Total/NA Total/NA	Water Water  Matrix Water Water Water Water	3520C 3520C Method 8270D 8270D 8270D	31640 31640 31640
MB 680-316409/4-A  nalysis Batch: 31672  Lab Sample ID  680-98624-1  680-98624-3  LCS 680-316409/5-A  LCSD 680-316409/6-A  rep Batch: 316953  Lab Sample ID	Method Blank  Client Sample ID  BSA-MW-01S-0214  BSA-MW-01S-0214-EB  Lab Control Sample  Lab Control Sample Dup	Total/NA Total/NA  Prep Type Total/NA Total/NA Total/NA Total/NA	Water Water  Water  Water  Water  Water  Water  Water  Water	3520C 3520C Method 8270D 8270D 8270D 8270D 8270D	31640 31640 31640
MB 680-316409/4-A  nalysis Batch: 31672  Lab Sample ID 680-98624-1 680-98624-3  LCS 680-316409/5-A  LCSD 680-316409/6-A  rep Batch: 316953  Lab Sample ID 680-98624-1 - RE	Method Blank  Client Sample ID  BSA-MW-01S-0214  BSA-MW-01S-0214-EB  Lab Control Sample  Lab Control Sample Dup  Client Sample ID	Total/NA Total/NA  Prep Type Total/NA Yotal/NA Total/NA Total/NA Prep Type	Water Water Water Water Water Water Water Water Water	3520C 3520C Method 8270D 8270D 8270D 8270D 8270D	31640 31640 31640
MB 680-316409/4-A  nalysis Batch: 31672  Lab Sample ID 680-98624-1 680-98624-3  LCS 680-316409/5-A  LCSD 680-316409/6-A  rep Batch: 316953  Lab Sample ID 680-98624-1 - RE 680-98624-3 - RE	Method Blank  Client Sample ID  BSA-MW-01S-0214  BSA-MW-01S-0214-EB  Lab Control Sample  Lab Control Sample Dup  Client Sample ID  BSA-MW-01S-0214	Total/NA Total/NA  Prep Type Total/NA Total/NA Total/NA Total/NA  Prep Type Total/NA	Water Water Water Water Water Water Water Water Water Water Water	3520C 3520C Method 8270D 8270D 8270D 8270D 8270D Method 3520C	31640 31640 31640
MB 680-316409/4-A  nalysis Batch: 31672  Lab Sample ID  680-98624-1  680-98624-3  LCSD 680-316409/5-A  LCSD 680-316409/6-A  rep Batch: 316953  Lab Sample ID  680-98624-1 - RE  680-98624-3 - RE  LCS 680-316953/6-A	Method Blank  Client Sample ID  BSA-MW-01S-0214  BSA-MW-01S-0214-EB  Lab Control Sample  Lab Control Sample Dup  Client Sample ID  BSA-MW-01S-0214  BSA-MW-01S-0214-EB	Total/NA Total/NA  Prep Type Total/NA Total/NA Total/NA Total/NA  Prep Type Total/NA Total/NA	Water Water Water Water Water Water Water Water Water Water Water Water Water	3520C 3520C Method 8270D 8270D 8270D 8270D Method 3520C 3520C	31640 31640 31640
MB 680-316409/4-A  Inalysis Batch: 31672  Lab Sample ID  680-98624-1  680-98624-3  LCSD 680-316409/5-A  LCSD 680-316409/6-A  Prep Batch: 316953  Lab Sample ID  680-98624-1 - RE  680-98624-3 - RE  LCS 680-316953/6-A  LCSD 680-316953/7-A	Method Blank  Client Sample ID  BSA-MW-01S-0214  BSA-MW-01S-0214-EB  Lab Control Sample  Lab Control Sample Dup  Client Sample ID  BSA-MW-01S-0214  BSA-MW-01S-0214  BSA-MW-01S-0214-EB  Lab Control Sample	Total/NA Total/NA  Prep Type Total/NA Total/NA Total/NA Total/NA  Prep Type Total/NA Total/NA Total/NA Total/NA	Water Water Water Water Water Water Water Water Water Water Water Water Water Water Water	3520C 3520C Method 8270D 8270D 8270D 8270D Method 3520C 3520C 3520C	31640 31640 31640
MB 680-316409/4-A  nalysis Batch: 31672  Lab Sample ID 680-98624-1 680-98624-3  LCS 680-316409/6-A  trep Batch: 316953  Lab Sample ID 680-98624-1 - RE 680-98624-3 - RE LCS 680-316953/6-A  LCSD 680-316953/7-A  MB 680-316953/5-A	Method Blank  Client Sample ID BSA-MW-01S-0214 BSA-MW-01S-0214-EB Lab Control Sample Lab Control Sample Dup  Client Sample ID BSA-MW-01S-0214 BSA-MW-01S-0214 BSA-MW-01S-0214-EB Lab Control Sample Lab Control Sample	Total/NA Total/NA  Prep Type Total/NA Total/NA Total/NA Total/NA  Prep Type Total/NA Total/NA Total/NA Total/NA Total/NA Total/NA Total/NA	Matrix Water Water Water Water Water Water Water Water Water Water Water Water Water Water Water	3520C 3520C Method 8270D 8270D 8270D 8270D Method 3520C 3520C 3520C 3520C	31640 31640 31640
Lab Sample ID 680-98624-1 680-98624-3 LCS 680-316409/5-A LCSD 680-316409/6-A Prep Batch: 316953 Lab Sample ID 680-98624-1 - RE 680-98624-3 - RE LCS 680-316953/6-A	Method Blank  Client Sample ID BSA-MW-01S-0214 BSA-MW-01S-0214-EB Lab Control Sample Lab Control Sample Dup  Client Sample ID BSA-MW-01S-0214 BSA-MW-01S-0214 BSA-MW-01S-0214-EB Lab Control Sample Lab Control Sample	Total/NA Total/NA  Prep Type Total/NA Total/NA Total/NA Total/NA  Prep Type Total/NA Total/NA Total/NA Total/NA Total/NA Total/NA Total/NA	Matrix Water Water Water Water Water Water Water Water Water Water Water Water Water Water Water	3520C 3520C Method 8270D 8270D 8270D 8270D Method 3520C 3520C 3520C 3520C	Prep Batcl 31640 31640 31640 Prep Batcl

#### **QC Association Summary**

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98624-1

SDG: KPS112

GC/MS	Semi VOA	A (Continue	d)

Analysis Bat	ch:	317351
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Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-98624-1 - RE	BSA-MW-01S-0214	Total/NA	Water	8270D	316953
680-98624~3 - RE	BSA-MW-01S-0214-EB	Total/NA	Water	8270D	316953
LCS 680-316953/6-A	Lab Control Sample	Total/NA	Water	8270D	316953
LCSD 680-316953/7-A	Lab Control Sample Dup	Total/NA	Water	8270D	316953
MB 680-316953/5-A	Method Blank	Total/NA	Water	8270D	316953

#### GC VOA

#### Analysis Batch: 317026

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-98624-1	BSA-MW-01S-0214	Total/NA	Water	RSK-175	
LCS 680-317026/4	Lab Control Sample	Total/NA	Water	RSK-175	
LCS 680-317026/5	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 680-317026/6	Lab Control Sample Dup	Total/NA	Water	RSK-175	
LCSD 680-317026/7	Lab Control Sample Dup	Total/NA	Water	RSK-175	
MB 680-317026/8	Method Blank	Total/NA	Water	RSK-175	

#### Metals

#### Prep Batch: 316214

1		25°	No Tues	Makelin	Method	Preo Batch	
i	Lab Sample ID	Client Sample ID	Prep Type	Matrix		Prep Batti	
	680-98624-1	BSA-MW-01S-0214	Total Recoverable	Water	3005A		
	680-98624-2	BSA-MW-01S-F(0.2)-0214	Dissolved	Water	3005A		
	LCS 680-316214/2-A	Lab Control Sample	Total Recoverable	Water	3005A		
	MB 680-316214/1-A	Method Blank	Total Recoverable	Water	3005A		

#### Analysis Batch: 316419

	Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batch
	680-98624-1	BSA-MW-01S-0214	Total Recoverable	Water	6010C	316214
1	680-98624-2	BSA-MW-01S-F(0.2)-0214	Dissolved	Water	6010C	316214
1	LCS 680-316214/2-A	Lab Control Sample	Total Recoverable	Water	6010C	316214
1	MB 680-316214/1-A	Method Blank	Total Recoverable	Water	6010C	316214

#### **General Chemistry**

#### Analysis Batch: 315764

Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batch
680-98624-1	BSA-MW-01S-0214	Total/NA	Water	353.2	
LCS 680-315764/14	Lab Control Sample	Total/NA	Water	353.2	
MB 680-315764/13	Method Blank	Total/NA	Water	353.2	

#### Analysis Batch: 316243

	Lab Sample ID 680-98624-1	Client Sample ID BSA-MW-01S-0214	Prep Type Total/NA	Matrix Water	Method 325.2	Prep Batch
or any or the	LCS 680-316243/20	Lab Control Sample	Total/NA	Water	325.2	
i	MR 680-316243/21	Method Blank	Total/NA	Water	325.2	

-	Analysis Batch: 316246					
William Control	Lab Sample ID 680-98624-1	Client Sample ID BSA-MW-01S-0214	Prep Type Total/NA	Matrix Water	Method 375.4	Prep Batch

#### **QC Association Summary**

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TeslAmerica Job ID: 680-98624-1

SDG: KPS112

nalysis Batch: 31624	6 (Continued)				
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 680-316246/6	Lab Control Sample	Total/NA	Water	375.4	***************************************
MB 680-316246/23	Method Blank	Total/NA	Water	375.4	
nalysis Batch: 31659	8				
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-98624-1	BSA-MW-01S-0214	Total/NA	Water	415,1	211200200000000000000000000000000000000
LCS 680-316598/33	Lab Control Sample	Total/NA	Water	415.1	
MB 680-316598/26	Method Blank	Total/NA	Water	415.1	
nalysis Batch: 31660		Deep Tone	Matrix	Method	Prep Batch
Lab Sample ID 680-98624-2	Client Sample ID BSA-MW-01S-F(0.2)-0214	Prep Type Dissolved	Water	415.1	
	Lab Control Sample	Dissolved	Water	415.1	
LCS 680-336600/84			. 12(0)	110.1	
LCS 680-316600/84 MB 680-316600/85	Method Blank	Dissolved	Water	415.1	
	Method Blank	=	Water	415.1	
MB 680-316600/85	Method Blank	=	Water Matrix	415.1 Method	Prep Batch
MB 680-316600/85 .naiysis Batch: 31704 Lab Sample ID	Method Blank	Dissolved			Prep Batch
MB 680-316600/85 naiysis Batch: 31704 Lab Sample ID 680-98624-1	Method Blank  9 Client Sample ID	Dissolved Prep Type	Matrix	Method	Prep Batch
MB 680-316600/85 nalysis Batch: 31704	Method Blank  Client Sample ID  BSA-MW-01S-0214	Prep Type Total/NA	Matrix Water	Method 310.1	Prep Batch

#### Lab Chronicle

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98624-1

SDG: KPS112

Client Sample ID: BSA-MW-01S-0214

Date Collected: 02/13/14 15:15 Date Received: 02/14/14 10:07 Lab Sample ID: 680-98624-1

Matrix: Water

	Batch	Batch		Dilution	Batch	Prepared		
Ргер Туре	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		10000	316857	02/24/14 16:57	MMT	TAL SAV
Total/NA	Prep	3520C			316409	02/20/14 14:37	RBS	TAL SAV
Total/NA	Analysis	8270D		1	316726	02/21/14 22:55	JLW	TAL SAV
Total/NA	Prep	3520C	RÉ		316953	02/24/14 15:35	RBS	TAL SAV
Total/NA	Analysis	8270D	RÉ	1	317351	02/26/14 16:01	SMC	TAL SAV
Total/NA	Analysis	RSK-175		1	317026	02/25/14 14:33	TAR	TAL SAV
Total Recoverable	Prep	3005A			316214	02/19/14 09:21	BJB	TAL SAV
Total Recoverable	Analysis	6010C		1	316419	02/19/14 21:07	BCB	TAL SAV
Total/NA	Analysis	353.2		1	315764	02/14/14 15:40	GRX	TAL SAV
Total/NA	Analysis	325.2		5	316243	02/18/14 13:36	JMÉ	TAL SAV
Total/NA	Analysis	375.4		1	316246	02/18/14 16:55	JMÉ	TAL SAV
Total/NA	Analysis	415.1		1	316598	02/20/14 05:07	CMP	TAL SAV
Total/NA	Analysis	310.1		1	317049	02/24/14 17:03	LBH	TAL SAV

Client Sample ID: BSA-MW-01S-F(0.2)-0214

Date Collected: 02/13/14 15:15

Date Received: 02/14/14 10:07

Lab Sample ID: 680-98624-2

Matrix: Water

	Batch	Batch		Oilution	Batch	Prepared		
Ргер Туре	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			316214	02/19/14 09:21	BJB	TAL SAV
Dissolved	Analysis	6010C		1	316419	02/19/14 21:11	BCB	TAL SAV
Dissolved	Analysis	415.1		1	316600	02/20/14 17:53	CMP	TAL SAV

Client Sample ID: BSA-MW-01S-0214-EB

Date Collected: 02/13/14 13:45

Date Received: 02/14/14 10:07

Lab Sample ID: 680-98624-3

Matrix: Water

····	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	316608	02/21/14 20:05	MMT	TAL SAV
Total/NA	Prep	3520C			316409	02/20/14 14:37	RBS	TAL SAV
Total/NA	Analysis	8270D		1	316726	02/21/14 23:19	JLW	TAL SAV
Totai/NA	Prep	3520C	RE		316953	02/24/14 15:35	RBS	TAL SAV
Total/NA	Analysis	8270D	RÉ	1	317351	02/26/14 16:25	SMC	TAL SAV

Client Sample ID: 1Q14 LTM Trip Blank #7

Date Collected: 02/13/14 00:00

Date Received: 02/14/14 10:07

Lab Sample ID: 680-98624-4

Matrix: Water

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	316858	02/24/14 16:14	MMT	TAL SAV

TestAmerica Savannah

MAR 1 0 2014

#### Lab Chronicle

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98624-1 SDG: KPS112

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

TestAmerica Savannah

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# MAR I 0 2014 M

Savannah

5102 LaRoche Avenue Chain of Custody Record



Savannah, GA 31404 phone 912.354.7858 fax 912.352.0165 TestAmerica Laboratories, Inc. Client Contact Project Manager: Bob Billman Site Contact: Michael Corbett COC No: URS Corporation Tel/Fax: (314) 743-4108 Lab Contact: Michele Kersey Carrier: COCs 1001 Highlands Plaza Drive West, Suite 300 Analysis Turnaround Time St. Louis, MO 63110 21563600.00001 Calendar ( C ) or Work Days (W) by 325.2/Suffate by 375.4 (314) 429-0100 Phone TAT if different from Below Dissolved Fe/Mn by 6919C (314) 429-0462 2 weeks Project Name: 1Q14 LTM GW Sampling 1 week Site: Solutia WG Krummrich Facility 2 days PO# 1 day Sample Sample Samole # o5 Sample Identification Time Type Matrix Sample Specific Notes: 2/13/14 1515 BSA-MW- 015 .0214 2 Water BSA-MW- OLS-F(0.2)-0214 1515 2 Water BSA-MW-01S-0214- EB 1345 Water 2 1Q14 LTM Trip Blank # 7 6 4 1 1 2 3,1 3 4 2 Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other Possible Hazard Identification Non-Hazard ☐ Flammable Skin Irritant \_\_\_\_\_nown Return To Client sposal By Lab son B A\_\_\_ive For Special Instructions/QC Requirements & Comments: 680-98624 Relinquished by Company: Date/Time: Received by: Company: 2/13/14 1630 URS Relinquished by: Company: Date/Time: Received by: Сотралу: Date/Time: Relinquished by: Company: Date/Time: Received by: Company: ,007

#### Login Sample Receipt Checklist

Client: Solutia Inc.

Job Number: 680-98624-1

SDG Number: KPS112

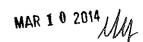
List Source: TestAmerica Savannah

List Number: 1

Creator: Conner, Keaton

Login Number: 98624

Question	Answer Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>N/A</td>	N/A
The cooler's custody seal, if present, is intact.	True
Sample custody seals, if present, are intact.	True
The cooler or samples do not appear to have been compromised or tampered with.	True
Samples were received on ice.	True
Cooler Temperature is acceptable.	True
Cooler Temperature is recorded.	True
COC is present.	True
COC is filled out in ink and legible.	True
COC is filled out with all perlinent information.	True
is the Field Sampler's name present on COC?	N/A
There are no discrepancies between the containers received and the COC.	True
Samples are received within Holding Time.	True
Sample containers have legible labels.	True
Containers are not broken or leaking.	True
Sample collection date/times are provided.	True
Appropriate sample containers are used.	True
Sample bottles are completely filled.	True
Sample Preservation Verified.	True
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True
Multiphasic samples are not present.	True
Samples do not require splitting or compositing.	True
Residual Chlorine Checked.	N/A



#### **Certification Summary**

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98624-1

SDG: KPS112

#### Laboratory: TestAmerica Savannah

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
	AFCEE		SAVLAB	
A2LA	DoD ELAP		399.01	02-28-15
A2LA	ISO/IEC 17025		399.01	02-28-15
Alabama	State Program	4	41450	06-30-14
Arkansas DEQ	State Program	6	88-0692	01-31-15
California	NELAP	9	3217CA	07-31-14
Colorado	State Program	8	N/A	12-31-14
Connecticut	State Program	1	PH-0161	03-31-15
-lorida	NELAP	4	E87052	06-30-14
GA Dept. of Agriculture	State Program	4	N/A	06-30-14
Georgia	State Program	4	N/A	06-30-14
Georgia	State Program	4	803	06-30-14
Guam	State Program	9	09-005r	04-17-14
Hawaii	State Program	9	N/A	06-30-14
llinois	NELAP	5	200022	11-30-14
ndiana	State Program	5	N/A	06-30-14
owa	State Program	7	353	07-01-15
Kentucky (DW)	State Program	4	90084	12-31-14
Kentucky (UST)	State Program	4	18	06-30-14
_ouisiana	NELAP	6	LA100015	12-31-14
Maine	State Program	1	GA00006	08-16-14
Maryland	State Program	3	250	12-31-14
Massachusetts	State Program	1	M-GA006	06-30-14
Michigan	State Program	5	9925	06-30-14
Mississippi	State Program	4	N/A	06-30-14
Montana	State Program	8	CERT0081	01-01-15
Vebraska	State Program	7	TestAmerica-Savannah	06-30-14
New Jersey	NELAP	2	GA769	06-30-14
New Mexico	State Program	6	N/A	06-30-14
New York	NELAP	2	10842	03-31-14
North Carolina DENR	State Program	4	269	12-31-14
North Carolina DHHS	State Program	4	13701	07-31-14
Oklahoma	State Program	6	9984	08-31-14
<sup>D</sup> ennsylvania	NELAP	3	68-00474	06-30-14
Puerto Rico	State Program	2	GA00006	12-31-14
South Carolina	State Program	4	98001	06-30-14
Tennessee	State Program	4	TN02961	06-30-14
l exas	NELAP	6	T104704185-08-TX	11-30-14
JSDA	Federal		SAV 3-04	04-07-14
/irginia	NELAP	3	460161	06-14-14
Washington	State Program	10	C1794	06-10-14
West Virginia DEP	State Program	3	94	06-30-14
West Virginia DHHR	State Program	3	9950C	12-31-14
Wisconsin	State Program	5	999819810	08-31-14
Wyoming	State Program	8	8TMS-L	06-30-14

## Solutia Krummrich Data Review WGK LTM 1Q14

**Laboratory SDG: KPS113** 

Data Reviewer: Melissa Mansker Peer Reviewer: Elizabeth Kunkel

Date Reviewed: 3/13/2014

Guidance: USEPA National Functional Guidelines for Superfund Organic Methods Data Review 2008. USEPA National Functional Guidelines for Superfund

**Inorganic Data Review 2010** 

Work Plan: Revised Long-Term Monitoring Program (LTMP) Work Plan (Solutia

2009)

Sample Identification					
CPA-MW-1D-0214	CPA-MW-1D-F(0.2)-0214				
1Q14 LTM Trip Blank #8					

#### 1.0 Data Package Completeness

Were all items delivered as specified in the QAPP and COC as appropriate? Yes

#### 2.0 Laboratory Case Narrative \ Cooler Receipt Form

Were problems noted in the laboratory case narrative or cooler receipt form?

Yes, the laboratory case narrative indicated sample CPA-MW-1D-0214 was re-extracted for SVOCs outside hold time for extraction. LCS/LCSD recoveries were outside evaluation criteria for SVOCs and nitrate. Samples were diluted due to high levels of target analytes. Instrument calibration was outside evaluation criteria for nitrate in sample CPA-MW-1D-0214. Dissolved organic carbon results were greater than total organic carbon results for samples CPA-MW-1D-F(0.2)-0214/CPA-MW-1D-0214, respectively. These issues are addressed further in the appropriate sections below.

The cooler receipt form indicated that one of one cooler was received by the laboratory at a temperature of 0.2°C which is outside the 4°C  $\pm$  2°C criteria. The samples were received in good condition; therefore no qualification of data was required. The cooler receipt form indicated a pH > 2 for dissolved organic carbon in sample CPA-MW-1D-F(0.2)-0214; please see section 11.0 of this review for qualifications.

#### 3.0 Holding Times

Were samples extracted/analyzed within applicable limits?

No, sample CPA-MW-1D-0214 was re-extracted for SVOCs three days outside the seven day hold time for extraction due to LCS recoveries outside evaluation criteria. SVOC data from the original extraction and analysis was used to qualify data. No qualification of SVOC data was required based on holding time criteria.

#### 4.0 Blank Contamination

Were any analytes detected in the Method Blanks, Field Blanks or Trip Blanks?

No

#### 5.0 Laboratory Control Sample

Were LCS recoveries within evaluation criteria?

No

LCS/LCSD ID	Parameter	Analyte	LCS/LCSD Recovery	RPD	LCS/LCSD/ RPD Criteria
LCS/LCSD 680- 316409/5/6-A	SVOCs	4-Chloroaniline	<b>4</b> /60	173	42-130/50
LCS 680-316042/14	General chemistry	Nitrate	112	NA	90-110

Analytical data reported as non-detect and associated with LCS recoveries above evaluation criteria, indicating a possible high bias, did not require qualification. The compound 4-chloroaniline is not reported for the associated samples. Analytical data reported as non-detect and associated with LCS recoveries above evaluation criteria, indicating a possible high bias, did not require qualification. No qualification of data was required.

#### 6.0 Surrogate Recoveries

Were surrogate recoveries within evaluation criteria?

Yes

#### 7.0 Matrix Spike and Matrix Spike Duplicate Recoveries

Were MS/MSD samples collected as part of this SDG?

No

#### 8.0 Internal Standard (IS) Recoveries

Were internal standard area recoveries within evaluation criteria?

Yes

#### 9.0 Laboratory Duplicate Results

Were laboratory duplicate samples collected as part of this SDG?

No

#### 10.0 Field Duplicate Results

Were field duplicate samples collected as part of this SDG?

No

#### 10.0 Sample Dilutions

For samples that were diluted and nondetect, were undiluted results also reported? Not applicable; analytes were detected in samples that were diluted.

#### 11.0 Additional Qualifications

Were additional qualifications applied?

Yes, the following samples are qualified, as summarized below, due to pH > 2.

Sample ID	Parameter	Analyte	Qualification
CPA-MW-1D-F(0.2)-0214	General chemistry	Dissolved organic carbon	J

Additionally, the following sample is qualified, as summarized below, due to instrument calibration outside evaluation criteria for nitrate.

Sample ID	Parameter	Analyte	Qualification
CPA-MW-1D-0214	General chemistry	Nitrate	UJ

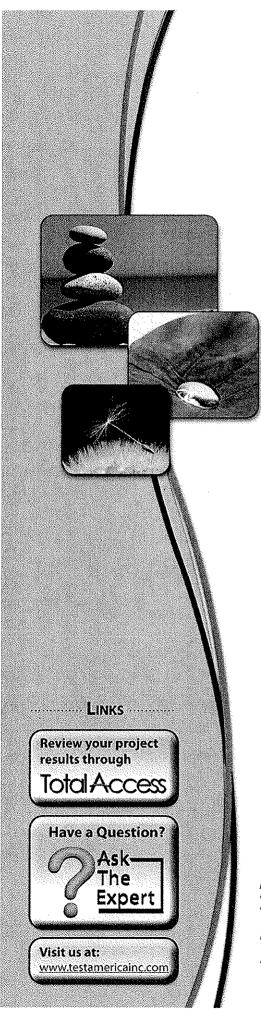
Analytical data requiring qualification based on dissolved organic carbon results greater than total organic carbon results in sample CPA-MW-1D-F(0.2)-0214/CPA-MW-1D-0214, respectively, are included in the table below. Dissolved organic carbon results in sample CPA-MW-1D-F(0.2)-0214 were previously qualified due to pH > 2, no further qualification was required.

Sample ID	Parameter	Analyte	Qualification
CPA-MW-1D-0214	General chemistry	Total organic carbon	J

#### SDG KPS113

Results of Samples from Monitoring Well:

CPA-MW-1D



## **TestAmerica**

THE LEADER IN ENVIRONMENTAL TESTING

#### **ANALYTICAL REPORT**

TestAmerica Laboratories, Inc. TestAmerica Savannah 5102 LaRoche Avenue Savannah, GA 31404 Tel: (912)354-7858

TestAmerica Job ID: 680-98660-1

TestAmerica Sample Delivery Group: KPS113

Client Project/Site: WGK Long Term Monitoring - 1Q14

For:

Solutia Inc. 575 Maryville Centre Dr. Saint Louis, Missouri 63141

Attn: Mr. Jerry Rinaldi

Michael RKersey

Authorized for release by: 2/28/2014 4:06:58 PM

Michele Kersey, Project Manager I (912)354-7858 michele.kersey@testamericainc.com

> Reviewed on MAR 1 3 2014 MM

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

TestAmerica Job ID: 680-98660-1 SDG: KPS113

Project/Site: WGK Long Term Monitoring - 1Q14

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Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98660-1

SDG: KPS113

Job ID: 680-98660-1

Laboratory: TestAmerica Savannah

Narrative

#### CASE NARRATIVE

Client: Solutia Inc.

Project: WGK Long Term Monitoring - 1Q14

Report Number: 680-98660-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In the event of interference or analytes present at high concentrations, samples may be diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

#### RECEIPT

The samples were received on 2/15/2014 9:28 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.2° C.

Except:

Method(s) 415.1, SM 5310B: The following sample(s) were collected in properly preserved vials for analysis of volatile organic compounds (VOCs). However, the pH was outside the required criteria when verified by the laboratory, and corrective action was not possible: CPA-MW-1D-F(0.2)-0214 (680-98660-2).

#### **VOLATILE ORGANIC COMPOUNDS (GC-MS)**

Samples CPA-MW-1D-0214 (680-98660-1) and 1Q14 LTM Trip Blank #8 (680-98660-3) were analyzed for Volatile Organic Compounds (GC-MS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 02/25/2014.

Sample CPA-MW-1D-0214 (680-9860-1)[250X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No difficulties were encountered during the volatiles analysis.

All quality control parameters were within the acceptance limits.

#### SEMIVOLATILE ORGANIC COMPOUNDS (AQUEOUS)

Sample CPA-MW-1D-0214 (680-98660-1) was analyzed for Semivolatile Organic Compounds (Aqueous) in accordance with EPA SW-846 Method 8270D. The samples were prepared on 02/20/2014 and 02/24/2014 and analyzed on 02/25/2014 and 02/26/2014.

The laboratory control sample (LCS) for batch 316409 recovered outside control limits for the following analytes: 4-Chloroaniline. The associated sample(s) was re-prepared and/or re-analyzed outside holding time. Both sets of data have been reported.

Sample CPA-MW-1D-0214 (680-98660-1)[2X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No other difficulties were encountered during the semivolatiles analysis.

All other quality control parameters were within the acceptance limits.

#### DISSOLVED GASES

Sample CPA-MW-1D-0214 (680-98660-1) was analyzed for dissolved gases in accordance with RSK-175. The samples were analyzed on 02/25/2014.

MAR 1 3 201

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98660-1

SDG: KPS113

#### Job ID: 680-98660-1 (Continued)

Laboratory: TestAmerica Savannah (Continued)

No difficulties were encountered during the dissolved gases analysis.

All quality control parameters were within the acceptance limits.

#### METALS (ICP)

Sample CPA-MW-1D-F(0.2)-0214 (680-98660-2) was analyzed for Metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared and analyzed on 02/19/2014.

No difficulties were encountered during the metals analysis.

All quality control parameters were within the acceptance limits.

#### METALS (ICP)

Sample CPA-MW-1D-0214 (680-98660-1) was analyzed for Metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared and analyzed on 02/19/2014.

No difficulties were encountered during the metals analysis.

All quality control parameters were within the acceptance limits.

#### **ALKALINITY**

Sample CPA-MW-1D-0214 (680-98660-1) was analyzed for alkalinity in accordance with EPA Method 310.1. The samples were analyzed on 02/24/2014.

No difficulties were encountered during the alkalinity analysis.

All quality control parameters were within the acceptance limits.

#### CHLORIDE

Sample CPA-MW-1D-0214 (680-98660-1) was analyzed for Chloride in accordance with EPA Method 325.2. The samples were analyzed on 02/18/2014.

Sample CPA-MW-1D-0214 (680-98660-1)[2X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No difficulties were encountered during the chloride analysis.

All quality control parameters were within the acceptance limits.

#### **NITRATE-NITRITE AS NITROGEN**

Sample CPA-MW-1D-0214 (680-98660-1) was analyzed for nitrate-nitrite as nitrogen in accordance with EPA Method 353.2. The samples were analyzed on 02/15/2014.

The nitrate result is obtained from a calculation incorporating the nitrite and nitrate + nitrite results. Re-analysis is not performed if QC for the calculated analyte does not meet acceptance criteria, provided the QC results for the component analytes are acceptable. Data have been qualified to denote this situation.

No other difficulties were encountered during the nitrate-nitrite analysis.

All other quality control parameters were within the acceptance limits.

#### SULFATE

Sample CPA-MW-1D-0214 (680-98660-1) was analyzed for sulfate in accordance with EPA Method 375.4. The samples were analyzed on 02/18/2014.

No difficulties were encountered during the sulfate analysis.

TestAmerica Savannah

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Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98660-1 SDG: KPS113

KPS113

Job ID: 680-98660-1 (Continued)

Laboratory: TestAmerica Savannah (Continued)

All quality control parameters were within the acceptance limits.

#### **TOTAL ORGANIC CARBON**

Sample CPA-MW-1D-0214 (680-98660-1) was analyzed for total organic carbon in accordance with EPA Method 415.1. The samples were analyzed on 02/20/2014.

DOC on field filtered sample was significantly higher than TOC on unfiltered sample. Both samples were reanalyzed to confirm results.

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No other difficulties were encountered during the TOC analysis.

All other quality control parameters were within the acceptance limits.

#### DISSOLVED ORGANIC CARBON (DOC)

Sample CPA-MW-1D-F(0.2)-0214 (680-98660-2) was analyzed for Dissolved Organic Carbon (DOC) in accordance with EPA Method 415.1. The samples were analyzed on 02/20/2014.

Sample CPA-MW-1D-F(0.2)-0214 (680-98660-2)[5X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No difficulties were encountered during the DOC analysis.

All quality control parameters were within the acceptance limits.

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# Sample Summary

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98660-1

SDG: KPS113

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-98660-1	CPA-MW-1D-0214	Water	02/14/14 11:20	02/15/14 09:28
680-98660-2	CPA-MW-1D-F(0,2)-0214	Water	02/14/14 11:20	02/15/14 09:28
680-98660-3	1Q14 LTM Trip Blank #8	Water	02/14/14 00:00	02/15/14 09:28

# **Method Summary**

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98660-1

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		S	DG:	KPS11	3

Method	Method Description	Protocol	Laboratory
3260B	Volatife Organic Compounds (GC/MS)	SW846	TAL SAV
3270D	Semivolatile Organic Compounds (GC/MS)	SW846	TAL SAV
RSK-175	Dissolved Gases (GC)	RSK	TAL SAV
010C	Metals (ICP)	SW846	TAL SAV
10.1	Alkalinity	MCAWW	TAL SAV
25.2	Chloride	MCAWW	TAL SAV
53.2	Nitrogen, Nitrate-Nitrite	MCAWW	TAL SAV
375.4	Sulfate	MCAWW	TAL SAV
115.1	TOC	MCAWW	TAL SAV
15.1	DOC	MCAWW	TAL SAV

#### Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

RSK = Sample Prep And Calculations For Dissolved Gas Analysis In Water Samples Using A GC Headspace Equilibration Technique, RSKSOP-175,

Rev. 0, 8/11/94, USEPA Research Lab

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And its Updates.

#### Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

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TestAmerica Savannah

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# Definitions/Glossary

Client: Solutia Project/Site: V	WGK Long Term Monitoring - 1Q14	TestAmerica Job ID: 680-98660-1 SDG: KPS113
Qualifiers		
GC/MS VOA		
Qualifier	Qualifier Description	
U	Indicates the analyte was analyzed for but not detected.	
GC/MS Semi		
Qualifier	Qualifier Description	
U	Indicates the analyte was analyzed for but not detected.	
Н	Sample was prepped or analyzed beyond the specified holding time	
*	LCS or LCSD exceeds the control limits	
İ	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.	
•	RPD of the LCS and LCSD exceeds the control limits	
GC VOA		
Qualifier	Qualifier Description	
U	Indicates the analyte was analyzed for but not detected.	
Metals	•	
Qualifier	Qualifier Description	
U	Indicates the analyte was analyzed for but not detected.	
-		
General Chen	•	
Qualifier	Qualifier Description	
•	LCS or LCSD exceeds the control limits	
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC exceeds the control limits.	
U	Indicates the analyte was analyzed for but not detected.	
Glossary		
Abbreviation	These commonly used abbreviations may or may not be present in this report.	
b	Listed under the "D" column to designate that the result is reported on a dry weight basis	
%R	Percent Recovery	
CNF	Contains no Free Liquid	
DER	Duplicate error ratio (normalized absolute difference)	
Dil Fac	Dilution Factor	
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample	
DLC	Decision level concentration	
MDA	Minimum detectable activity	
EDL	Estimated Detection Limit	
MDC	Minimum detectable concentration	
MDL	Method Detection Limit	
ML	Minimum Level (Dioxin)	
NC	Not Calculated	
ND	Not detected at the reporting limit (or MDL or EDL if shown)	
PQL	Practical Quantitation Limit	
QC	Quality Control	
RER	Relative error ratio	
RL	Reporting Limit or Requested Limit (Radiochemistry)	
RPD	Relative Percent Difference, a measure of the relative difference between two points	
TEF	Toxicity Equivalent Factor (Dioxin)	
TEO	Taylor Facility Facility (Pinis)	

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TestAmerica Savannah

Toxicity Equivalent Quotient (Dioxin)

TEQ

# **Detection Summary**

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98660-1

Lab Sample ID: 680-98660-1

Lab Sample ID: 680-98660-2

Lab Sample ID: 680-98660-3

SDG: KPS113

# Client Sample ID: CPA-MW-1D-0214

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	7200	#31/F19F00009413-#34/F00041004-04/F000	250		ug/L	250	_	8260B	Total/NA
Chlorobenzene	17000		250		ug/L	250		8260B	Total/NA
1,2-Dichlorobenzene	14000		250		ug/L	250		8260B	Total/NA
1,3-Dichlorobenzene	1200		250		ug/L	250		8260B	Total/NA
1,4-Dichlorobenzene	9300		250		ug/L	250		8260B	Total/NA
1,2,4-Trichlorobenzene	650		20		ug/L	2		8270D	Total/NA
1,2,4-Trichtorobenzene - RE	510	Н	21		ug/L	2		8270D	Total/NA
Ethane	10		1.1		ug/L	1		RSK-175	Total/NA
Methane (TCD)	8300		390		ug/L	1		RSK-175	Total/NA
Iron	0.55		0.050		mg/L	1		6010C	Total
Manganese	0.079		0.010		mg/L	1		6010C	Recoverabl Total Recoverabl
Chloride	92		2.0		mg/L	2		325.2	Total/NA
Total Organic Carbon	10		1.0		mg/L	1		415.1	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Alkalinity	820	10//4-4-1-10-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1	5.0		mg/L	1		310.1	Total/NA

# Client Sample ID: CPA-MW-1D-F(0.2)-0214

Analyte	Result Qualifier	RL	MDL Unit	Dil Fac D	Method	Prep Type
Iron, Dissolved	0.28	0.050	mg/L	1	6010C	Dissolved
Manganese, Dissolved	0.049	0.010	mg/L	1	6010C	Dissolved
Dissolved Organic Carbon	130	5,0	mg/L	5	415.1	Dissolved

# Client Sample ID: 1Q14 LTM Trip Blank #8

No Detections.

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98660-1

SDG: KPS113

8

Lab Sample ID: 680-98660-1 Client Sample ID: CPA-MW-1D-0214

Date Collected: 02/14/14 11:20 Matrix: Water Date Received: 02/15/14 09:28

Method: 8260B - Volatile Orga Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fa
Benzene	7200		250		ug/L			02/25/14 19:54	25
Chlorobenzene	17000		250		ug/L			02/25/14 19:54	25
1,2-Dichlorobenzene	14000		250		ug/L			02/25/14 19:54	25
1,3-Dichlorobenzene	1200		250		ug/L			02/25/14 19:54	25
1,4-Dichlorobenzene	9300		250		ug/L			02/25/14 19:54	25
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
4-Bromofluorobenzene	96		70 - 130					02/25/14 19:54	25
Dibromofluoromethane	92		70 - 130					02/25/14 19:54	2
Toluene-dθ (Surr)	91		70 - 130					02/25/14 19:54	2
Method: 8270D - Semivolatile	Organic Compou	nds (GC/MS	S)						
Analyte	•	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil F
2-Chlorophenol	20	Ū	20		ug/L		02/20/14 14:37	02/25/14 14:52	#TWO TO THE TOTAL PARTY AND THE TOTAL PARTY AN
1,2,4-Trichlorobenzene	650		20		ug/L		02/20/14 14:37	02/25/14 14:52	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil F
2-Fluorobiphenyl	63		38 - 130				02/20/14 14:37	02/25/14 14:52	
2-Fluorophenol	64		25 . 130				02/20/14 14:37	02/25/14 14:52	
Nitrobenzene-d5	75		39 130				02/20/14 14:37	02/25/14 14:52	
Phenol-d5	. 55		25 . 130				02/20/14 14:37	02/25/14 14:52	
Terphenyl-d14	27		10 - 143				02/20/14 14:37	02/25/14 14:52	
2,4,6-Tribromophenol	78		31 - 141				02/20/14 14:37	02/25/14 14:52	
Method: 8270D - Semivolatile	Organic Compou	inds (GC/MS	S) - RE						
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil F
2-Chlorophenol	21	UН	21		ug/L		02/24/14 15:35	02/26/14 16:50	
1,2,4-Trichlorobenzene	510	Н	21		ug/L		02/24/14/15:35	02/26/14 16:50	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil F
2-Fluorobiphenyl	48		38 - 130				02/24/14 15:35	02/26/14 16:50	
2-Fluorophenol	58		25 - 130				02/24/14 15:35	02/26/14 16:50	
Nitrobenzene-d5	58		39 - 130				02/24/14 15:35	02/26/14 16:50	
Phenol-d5	60		25 . 130				02/24/14 15:35	02/26/14 16:50	
Terphenyl-d14	29		10 - 143				02/24/14 15:35	02/26/14 16:50	
2,4,6-Tribromophenol	64		31 - 141				02/24/14 15:35	02/26/14 16:50	
Method: RSK-175 - Dissolved	Gases (GC)								
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil F
Ethane	10		1.1		ug/L			02/25/14 14:46	
Ethylene	1.0	U	1.0		ug/L			02/25/14 14:46	
Methane (TCD)	8300		390		ug/L			02/25/14 14:46	
Method: 6010C - Metals (ICP)	- Total Recoverat	ole							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil F
Iron	0.55		0.050		mg/L		02/19/14 09:21	02/19/14 21:16	
			0.010		mg/L		02/19/14 09:21	02/19/14 21:16	
	0.079		2.2.7.2						
Manganese	0.079		-10.12						
Manganese General Chemistry Analyte		Qualifier	RL	MDL	Unit mg/L	D	Prepared	Analyzed 02/18/14 12:46	Dil I

TestAmerica Savannah

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98660-1

SDG: KPS113

Client Sample ID: CPA-MW-1D-0214

Date Collected: 02/14/14 11:20 Date Received: 02/15/14 09:28 Lab Sample ID: 680-98660-1

Matrix: Water

General Chemistry (Continued)									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.050	U.V. (1)	0.050		mg/L	 		02/15/14 17:54	1
Suifate	5.0	U 🐧	5.0		mg/L			02/18/14 17:01	1
Total Organic Carbon	10	ブ	1.0		mg/L			02/20/14 08:34	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	820		5.0		mg/L	 		02/24/14 18:06	1
Carbon Dioxide, Free	5.0	U	5.0		mg/L			02/24/14 18:06	1





Client: Solutia Inc.

Manganese, Dissolved

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98660-1

SDG: KPS113

Client Sample ID: CPA-MW-1D-F(0.2)-0214

Date Collected: 02/14/14 11:20 Date Received: 02/15/14 09:28 Lab Sample ID: 680-98660-2

02/19/14 21:21

02/19/14 09:21

Matrix: Water

Dil Fac

- 1	Method: 6010C - Metals (ICP) - Dis	solved							
100	Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed
1	Iron, Dissolved	0.28		0.050		mg/L		02/19/14 09:21	02/19/14 21:21

0.049

General Chemistry - Dissolved

General Chemistry - Dissolved									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	130		5.0		mg/L			02/20/14 19:40	5

0.010

mg/L

1

8

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98660-1

SDG: KPS113

Client Sample ID: 1Q14 LTM Trip Blank #8

Date Collected: 02/14/14 00:00 Date Received: 02/15/14 09:28 Lab Sample ID: 680-98660-3

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	~	ug/L			02/25/14 16:31	1
Chiorobenzene	1.0	U	1.0		ug/L			02/25/14 16:31	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			02/25/14 16:31	1
1,3-Dichlorobenzene	1.0	U	1,0		ug/L			02/25/14 16:31	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			02/25/14 16:31	1

	Surrogate	%Recovery	Qualifier	Limits	Prepared Analyzed	Dil Fac
	4-Bromofluorobenzene	96		70 - 130	02/25/14 16:31	1
-	Dibromofluoromethane	98		70 - 130	02/25/14 16:31	1
-	Toluene-d8 (Surr)	89		70 - 130	02/25/14 16:31	1

MAR 1 3 2014

# **Surrogate Summary**

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98660-1

SDG: KPS113

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

Prep Type: Total/NA

				Percent Surro	ogate Recovery (Acceptance Limits)
		BFB	DBFM	TOL	
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	(70-130)	
580-98660-1	CPA-MW-1D-0214	96	92	91	
380-98660-3	1Q14 LTM Trip Blank #8	96	98	89	
_CS 680-317055/4	Lab Control Sample	96	86	95	
_CSD 680-317055/5	Lab Control Sample Dup	97	86	95	
MB 680-317055/9	Method Blank	91	95	89	

BFB = 4-Bromofluorobenzene

DBFM = Dibromofluoromethane

TOL = Toluene-d8 (Surr)

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Water

Percent Surrogate Recovery (Acceptance Limits) FBP 2FP NBZ PHL TPH TBP Lab Sample ID Client Sample ID (38-130)(25-130) (39-130) (25-130)(10-143)(31-141)680-98660-1 CPA-MW-1D-0214 63 64 75 55 27 78 680-98660-1 - RE CPA-MW-1D-0214 48 58 58 60 29 64 LCS 680-316409/5-A Lab Control Sample 76 71 79 63 85 89 LCS 680-316953/6-A Lab Control Sample 71 63 67 63 77 75 LCSD 680-316409/6-A Lab Control Sample Dup 81 69 73 66 82 91 LCSD 680-316953/7-A Lab Control Sample Dup 79 73 79 72 87 87 MB 680-316409/4-A Method Blank 78 88 77 100 89 70 MB 680-316953/5-A Method Blank 70 68 73 73 88

Surrogate Legend

FBP = 2-Fluorobiphenyl

2FP = 2-Fluorophenol

NBZ = Nitrobenzene-d5

PHL = Phenol-d5

TPH = Terphenyl-d14

TBP = 2,4,6-Tribromophenol

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98660-1

SDG: KPS113

# Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 680-317055/9

Matrix: Water

Analysis Batch: 317055

Client Sample ID: Method Blank
Prep Type: Total/NA

мв мв

	MID	1110								
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac	
Benzene	1.0	Ü	1.0		ug/L	***************************************		02/25/14 12:40	1	
Chlorobenzene	1.0	U	1.0		ug/L			02/25/14 12:40	1	
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			02/25/14 12:40	1	
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			02/25/14 12:40	1	
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			02/25/14 12:40	1	
	мв	МВ								
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac	
4 Promofuorohoezono	01		70 120			•	***************************************	02/25/14 12:40	1	

4-Bromofluorobenzene 70 - 130 02/25/14 12:40 Dibromofluoromethane 70 - 130 02/25/14 12:40 95 02/25/14 12:40 Toluene-d8 (Surr) 70 - 130 89

Lab Sample ID: LCS 680-317055/4

Matrix: Water

Analysis Batch: 317055

Client Sample ID: Lab Control Sample Prep Type: Total/NA

5									
1		Spike	LCS	LCS				%Rec.	
-	Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
	Benzene	50.0	51.8		ug/L		104	74 - 123	
1	Chlorobenzene	50.0	45.6		ug/L		91	79 - 120	
	1,2-Dichlorobenzene	50.0	45.0	•	ug/L		90	77: 124	
	1,3-Dichlorobenzene	50.0	46.5		ug/L		93	79 - 123	
	1,4-Dichlorobenzene	50.0	45.5		ug/L		91	76 - 124	

LCS LCS Surrogate %Recovery Qualifier Limits 4-Bromofluorobenzene 96 70 - 130 Dibromofluoromethane 86 70 - 130 Toluene-d8 (Surr) 70 - 130 95

Lab Sample ID: LCSD 680-317055/5

Matrix: Water

Analysis Batch: 317055

Client Sample ID: I	Lab Control Sample Dup
	Prep Type: Total/NA

Analysis Batch. 517055									
	Spike	LCSD	LCSD				%Rec.		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	50.0	50.9		ug/L		102	74 - 123	2	30
Chlorobenzene	50.0	46.1		ug/L		92	79 - 120	1	30
1,2-Dichlorobenzene	50.0	45,9		ug/L		92	77 - 124	2	30
1,3-Dichtorobenzene	50.0	46.8		ug/L		94	79 - 123	1	30
1,4-Dichlorobenzene	50.0	47.1		ug/L		94	76 - 124	3	30

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene	97		70 - 130
Dibromofluoromethane	88		70 - 130
Toluene-d8 (Surr)	95		70 - 130

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98660-1

SDG: KPS113

# Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 680-316409/4-A

Matrix: Water

Analyte
2-Chlorophenol

Analysis Batch: 317112

Client Sample ID: Method Blank

Prep Type: Total/NA Prep Batch: 316409

MB	WR							
Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
 10	U	10		ug/L		02/20/14 14:37	02/25/14 14:29	1
10	U	10		ug/L		02/20/14 14:37	02/25/14 14:29	1

1,2,4-Irichioropenzene	10	U	10	ug/∟	02/20/14 14:37	02/25/14 14:29	1
	MB	MB					
Surrogate	%Recovery	Qualifier	Limits		Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	81		38 - 130		02/20/14 14:37	02/25/14 14:29	1
2-Fluorophenol	78		25 - 130		02/20/14 14:37	02/25/14 14:29	1
Nitrobenzene-d5	88		39 _ 130		02/20/14 14:37	02/25/14 14:29	1
Phenol-d5	77		25 - 130		02/20/14 14:37	02/25/14 14:29	1
Terphenyl-d14	100		10 - 143		02/20/14 14:37	02/25/14 14:29	1
2,4,6-Tribromophenol	89		31 - 141		02/20/14 14:37	02/25/14 14:29	1

Lab Sample ID: LCS 680-316409/5-A

Matrix: Water

Analysis Batch: 316726

Client Sample ID: Lab Control Sample

Prep Type: Total/NA Prep Batch: 316409

		Spike	LCS	LCS				%Rec.	
An	nlyte	Added	Result	Qualifier	Unit	Ð	%Rec	Limits	
4-0	hloroaniline	 100	4.41	J*	ug/L	_	(4)	42 - 130	 
2-0	hlorophenol	100	75.4		ug/L		75	57 - 130	
1,4	-Dioxane ·	100	62.8		ug/L		63	·35 - 130	
1,2	4-Trichlorobenzene	100	60.3		ug/L		60	42 - 130	

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
2-Fluorobiphenyl	76		38 - 130
2-Fluorophenol	71		25 - 130
Nítrobenzene-d5	79		39 - 130
Phenol-d5	63		25 - 130
Terphenyl-d14	85		10 - 143
2,4,6-Tribromophenol	89		31 - 141

Lab Sample ID: LCSD 680-316409/6-A

Matrix: Water

Analysis Batch: 316726

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 316409

		Spike	LCSD	LCSD				%Rec.		RPD
	Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
-	4-Chloroaniline	100	60.0	*	ug/L		60	42 - 130	(173)	50
	2-Chlorophenol	100	71,4		ug/L		71	57 - 130	6	50
	1,4-Dioxane	100	63.4		ug/L		63	35 - 130	1	50
	1,2,4-Trichlorobenzene	100	54.1		ug/L		54	42 - 130	11	50

LCSD	LCSD	
%Recovery	Qualifier	Limits
81		38 _ 130
69		25 - 130
73		39 - 130
66		25 - 130
82		10 - 143
91		31 - 141
	%Recovery 81 69 73 66 82	81 69 73 66 82

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98660-1

SDG: KPS113

# Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 680-316953/5-A Client Sample ID: Method Blank Matrix: Water Prep Type: Total/NA Analysis Batch: 317351 Prep Batch: 316953

мв мв

	Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
-	2-Chlorophenol	10	U	10		ug/L	*****	02/24/14 15:35	02/26/14 14:24	1
	1,2,4-Trichlorobenzene	10	U	10		ug/L		02/24/14 15:35	02/26/14 14:24	1
		мв	мв							

	MB	MB				
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	70	,	38 - 130	02/24/14 15:35	02/26/14 14:24	1
2-Fluorophenol	68		25 - 130	02/24/14 15:35	02/26/14 14:24	1
Nitrobenzene-d5	73		39 - 130	02/24/14 15:35	02/26/14 14:24	1
Phenol-d5	73		25 - 130	02/24/14 15:35	02/26/14 14:24	1
Terphenyl-d14	88		10 - 143	02/24/14 15:35	02/26/14 14:24	1
2.4.6-Tribromonhenol	70		31 141	02/24/14 15:35	02/26/14 14:24	1

Lab Sample ID: LCS 680-316953/6-A Client Sample ID: Lab Control Sample Matrix: Water Prep Type: Total/NA

Analysis Batch: 317351 Prep Batch: 316953

		Spike	LCS	rcs				%Rec.		
Analyte		Added	Result	Qualifier	Unit	D	%Rec	Limits		
4-Chloroaniline	New York Charles and Charles a	100	54.9	***************************************	ug/L		55	42 - 130	TOTOGRAFIO ELITORNO	***
2-Chlorophenol		100	69.5		ug/L		70	57 - 130		
1,4-Dioxane	•	100	57.7·		ug/L		58 -	35 - 130		
1,2,4-Trichtorobenzene		100	49.6		ug/L		50	42 - 130		

LCS LCS Surrogate %Recovery Qualifier Limits 2-Fluorobiphenyl 38 - 130 71 2-Fluorophenol 63 25 - 130 Nitrobenzene-d5 67 39.130 Phenol-d5 25 - 130 63 Terphenyl-d14 77 10-143 2,4,6-Tribromophenol 75 31 - 141

Lab Sample ID: LCSD 680-316953/7-A Client Sample ID: Lab Control Sample Dup

Matrix: Water Prep Type: Total/NA Analysis Batch: 317351 Prep Batch: 316953

-		Spike	LCSD	LCSD			%Rec.		RPD	
	Analyte	Added	Result	Qualifier Un	nit D	%Rec	Limits	RPD	Limit	
2	4-Chloroaniline	100	7 56.5	ug	/L	56	42 - 130	3	50	
	2-Chlorophenol	100	81.4	ug	/L	81	57 <sub>-</sub> 130	16	50	
	1,4-Dioxane	100	64.1	ug	/L	64	35 130	10	50	
i	1.2.4-Trichtorohenzene	100	59.1	uo	/I	59	42 - 130	18	50	

		LCSD	LCSD	
	Surrogate	%Recovery		Limits
	2-Fluorobiphenyl	79	WALL STATE OF THE	38 - 130
	2-Fluorophenol	73		25 _ 130
	Nitrobenzene-d5	79		39 - 130
	Phenol-d5	72		25 - 130
1000	Terphenyl-d14	87		10 - 143
	2,4,6-Tribromophenol	87		31 - 141









Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98660-1

SDG: KPS113

#### Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 680-317026/8

Matrix: Water

Client Sample ID: Method Blank
Prep Type: Total/NA

Analysis Batch: 317026

	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	1.1	Ū	1.1		ug/L			02/25/14 11:41	1
Ethylene	1.0	U	1.0		ug/L			02/25/14 11:41	1
Methane	0.58	U	0,58		ug/L			02/25/14 11:41	1
Methane (TCD)	390	U	390		ug/L			02/25/14 11:41	1

Lab Sample ID: LCS 680-317026/4 Client Sample ID: Lab Control Sample
Matrix: Water Prep Type: Total/NA

Analysis Batch: 317026

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Ethane	288	264		ug/L		91	75 - 125	
Ethylene	269	254		ug/L		94	75 - 125	
Methane	154	131		ug/L		85	75 - 125	

Lab Sample ID: LCS 680-317026/5

Matrix: Water

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analysis Batch: 317026

1	Analysis Batch: 317026									
		Spike	LCS	LCS				%Rec.		
	Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits		
	Methane (TCD)	1920	1480		ug/L		77	75 - 125	*	

Lab Sample ID: LCSD 680-317026/6 Client Sample ID: Lab Control Sample Dup Matrix: Water Prep Type: Total/NA Analysis Batch: 317026 Spike LCSD LCSD %Rec. RPD Analyte Added Result Qualifier Unit %Rec Limits Limit

 Methane (TCD)
 1920
 1870
 ug/L
 97
 75 - 125
 24
 30

 Lab Sample ID: LCSD 680-317026/7
 Client Sample ID: Lab Control Sample Dup Matrix: Water
 Prep Type: Total/NA

Analysis Batch: 317026

•	Spike	LCSD	LCSD				%Rec.		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Ethane	288	275	SOURCE CONTRACTOR OF THE PERSON	ug/L		95	75 - 125	4	30
Ethylene	269	260		ug/L		97	75 - 125	2	30
Methane	154	137		ug/L		89	75 - 125	4	30

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 680-316214/1-A

Matrix: Water

Analysis Batch: 316419

MB MB

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 316214

i		MB	MB							
	Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
:	Iron	0.050	Ü	0.050		mg/L		02/19/14 09:21	02/19/14 20:00	1
1	Iron, Dissolved	0.050	U	0.050		mg/L		02/19/14 09:21	02/19/14 20:00	1
1	Manganese	0,010	U	0.010		mg/L		02/19/14 09:21	02/19/14 20:00	1
	Manganese, Dissolved	0.010	U	0.010		mg/L		02/19/14 09:21	02/19/14 20:00	1

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98660-1

SDG: KPS113

Method: 6010C - Metals (	(ICP) (Continued)
--------------------------	-------------------

Lab Sample ID: LCS 680-316214/2-A	Client Sample ID: Lab Control Sample
Matrix: Water	Prep Type: Total Recoverable
Analysis Batch: 316419	Prep Batch: 316214

Allalysis Datell. S10415						1 10p	Daton. O.C.
	Spike	LCS	LCS			%Rec.	
Analyte	Added	Result	Qualifier Unit	D	%Rec	Limits	
Iron ·	5.00	5.15	mg/L		103	75 - 125	
Iron, Dissolved	5.00	5.15	mg/L		103	75 - 125	
Manganese	0.500	0,536	mg/L		107	75 - 125	
Manganese, Dissolved	0.500	0.536	mg/L		107	75 - 125	

Method: 310.1 - Alkalinity

Client Sample ID: Method Blank Lab Sample ID: MB 680-317049/5 Prep Type: Total/NA Matrix: Water

Analysis Batch: 317049

	MB	MB							
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	5.0	U	5.0		mg/L		,	02/24/14 16:36	1
Carbon Dioxide, Free	5.0	U	5.0		mg/L			02/24/14 16:36	1

Client Sample ID: Lab Control Sample Lab Sample ID: LCS 680-317049/6 Prep Type: Total/NA Matrix: Water

Analysis Batch: 317049

Spike LCS LCS %Rec. Result Qualifier %Rec Limits Analyte Added Unit

80 - 120 Alkalinity 250 223 mg/L 89

Lab Sample ID: LCSD 680-317049/32

Client Sample ID: Lab Control Sample Dup Matrix: Water Prep Type: Total/NA

Analysis Batch: 317049

Spike LCSD LCSD %Rec. RPD Added Result Qualifier Unit %Rec Limits RPD Limit Analyte 250 241 mg/L 80 - 120 30 Alkalinity

Method: 325.2 - Chloride

Lab Sample ID: MB 680-316243/21 Client Sample ID: Method Blank Matrix: Water Prep Type: Total/NA

Analysis Batch: 316243

MB MB Result Qualifier RΙ MDI Unit Prepared Analyzed Dil Fac Analyte 1.0 02/18/14 12:52 Chloride 1.0 Ü mg/L

Client Sample ID: Lab Control Sample Lab Sample ID: LCS 680-316243/20 Prep Type: Total/NA Matrix: Water

Analysis Batch: 316243

%Rec. Spike LCS LCS Added Qualifier Unit %Rec Limits Analyte Result Chloride 25.0 25.8 mg/L B5 - 115

Client: Solutia Inc. TestAmerica Job ID: 680-98660-1 Project/Site: WGK Long Term Monitoring - 1Q14 SDG: KPS113 Method: 353.2 - Nitrogen, Nitrate-Nitrite Lab Sample ID: MB 680-316042/13 Client Sample ID: Method Blank Matrix: Water Prep Type: Total/NA Analysis Batch: 316042 MB MB Analyte Result Qualifier RL MDL Unit Analyzed Dil Fac Prepared Nitrate as N 0.050 U^ 0.050 02/15/14 17:36 mg/L Lab Sample ID: LCS 680-316042/14 Client Sample ID: Lab Control Sample Matrix: Water Prep Type: Total/NA Analysis Batch: 316042 LCS LCS %Rec. Spike Analyte Added Result Qualifier Unit Limits Nitrate as N 0.500 0.560 90 - 110 mg/L Nitrate Nitrite as N 106 1.00 1.06 mg/L 90 - 110 90 - 110 Nitrite as N 0.500 101 0.503 mg/L Method: 375.4 - Sulfate Lab Sample ID: MB 680-316247/15 Client Sample ID: Method Blank Matrix: Water Prep Type: Total/NA Analysis Batch: 316247 мв мв Result Qualifier Dil Fac Analyte RL MDI Unit Analyzed Prepared Sulfate 5.0 02/18/14 17:29 5.0 U mg/Ł Lab Sample ID: LCS 680-316247/10 Client Sample ID: Lab Control Sample Matrix: Water Prep Type: Total/NA Analysis Batch: 316247 Spike LCS LCS %Rec. Analyte Added Result Qualifier Unit %Rec Sulfate 20.0 19.8 mg/L 75 - 125 Method: 415.1 - DOC Lab Sample ID: MB 680-316600/85 Client Sample ID: Method Blank Matrix: Water Prep Type: Dissolved Analysis Batch: 316600 мв мв Result Qualifier RL MDL Unit Prepared Analyzed Dil Fac

TestAmerica Savannah

02/20/14 15:52

Prep Type: Dissolved

Client Sample ID: Lab Control Sample

%Rec.

Limits

80 - 120

Spike

Added

20.0

mg/L

Unit

mg/L

D

%Rec

104

LCS LCS

20.8

Result Qualifier

1.0 Ü

Dissolved Organic Carbon

Analysis Batch: 316600

Dissolved Organic Carbon

Matrix: Water

Analyte

Lab Sample ID: LCS 680-316600/84

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98660-1

Client Sample ID: Method Blank

SDG: KPS113

Method: 415.1 - TOC

Lab Sample ID: MB 680-316598/26

Matrix: Water

Analysis Batch: 316598

Prep Type: Total/NA

мв мв

Analyte Result Qualifier RL MDL Unit Analyzed Dil Fac Total Organic Carbon 1.0 U 1.0 mg/L 02/20/14 00:21

Lab Sample ID: LCS 680-316598/33 Client Sample ID: Lab Control Sample Prep Type: Total/NA

Matrix: Water

Analysis Batch: 316598

Spike LCS LCS %Rec. Analyte Added Result Qualifier Limits Unit %Rec Total Organic Carbon 20,0 104 80 - 120 20,7 mg/L

# **QC Association Summary**

Client: Solutia Inc.

GC/MS VOA

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98660-1

SDG: KPS113

#### Analysis Batch: 317055 Method Prep Batch Client Sample ID Prep Type Matrix Lab Sample ID CPA-MW-1D-0214 Total/NA Water 8260B 680-98660-1 8260B Total/NA Water 680-98660-3 1Q14 LTM Trip Blank #8 8260B Total/NA Water LCS 680-317055/4 Lab Control Sample 8260B LCSD 680-317055/5 Lab Control Sample Dup Total/NA Water Total/NA Water 8260B MB 680-317055/9 Method Blank GC/MS Semi VOA Prep Batch: 316409 Prep Batch Method Lab Sample ID Client Sample ID Prep Type Matrix Total/NA Water 3520C 680-98660-1 CPA-MW-1D-0214 Total/NA Water 3520C LCS 680-316409/5-A Lab Control Sample LCSD 680-316409/6-A Lab Control Sample Dup Total/NA Water 3520C MB 680-316409/4-A Method Blank Total/NA Water 3520C Analysis Batch: 316726 Prep Type Matrix Method Prep Batch Lab Sample ID Client Sample ID LCS 680-316409/5-A Lab Control Sample Total/NA Water 8270D 316409 8270D 316409 LCSD 680-316409/6-A Lab Control Sample Dup Total/NA Water Prep Batch: 316953 Client Sample ID Prep Type Matrix Method Prep Batch Lab Sample ID 3520C 680-98660-1 - RE CPA-MW-1D-0214 Total/NA Water Total/NA Water 3520C LCS 680-316953/6-A Lab Control Sample 3520C Total/NA Water LCSD 680-316953/7-A Lab Control Sample Dup MB 680-316953/5-A Method Blank Total/NA Water 3520C Analysis Batch: 317112 Lab Sample ID Client Sample ID Ргер Туре Matrix Method Prep Batch Water 8270D 316409 680-98660-1 CPA-MW-1D-0214 Total/NA MB 680-316409/4-A Method Blank Total/NA Water 8270D 316409 Analysis Batch: 317351 Matrix Method Prep Batch Lab Sample 1D Client Sample ID Prep Type 680-98660-1 - RE CPA-MW-1D-0214 Total/NA Water 8270D 316953 Total/NA Water 8270D 316953 LCS 680-316953/6-A Lab Control Sample 8270D 316953 Total/NA Water LCSD 680-316953/7-A Lab Control Sample Dup 8270D 316953 Water Total/NA MB 680-316953/5-A Method Blank

Analysis	Batch:	317026
----------	--------	--------

GC VOA

	Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method Prep Batch
1	680-98660-1	CPA-MW-1D-0214	Total/NA	Water	RSK-175
	LCS 680-317026/4	Lab Control Sample	Total/NA	Water	RSK-175
-	LCS 680-317026/5	Lab Control Sample	Total/NA	Water	RSK-175
-	LCSD 680-317026/6	Lab Control Sample Dup	Total/NA	Water	RSK-175
A	LCSD 680-317026/7	Lab Control Sample Dup	Total/NA	Water	RSK-175
	MB 680-317026/8	Method Blank	Total/NA	Water	RSK-175

# **QC Association Summary**

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98660-1

SDG: KPS113

Metals					***************************************
Prep Batch: 316214					
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-98660-1	CPA-MW-1D-0214	Total Recoverable	Water	3005A	
680-98660-2	CPA-MW-1D-F(0.2)-0214	Dissolved	Water	3005A	
LCS 680-316214/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
MB 680-316214/1-A	Method Blank	Total Recoverable	Water	3005A	
nalysis Batch: 31641	9				
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-98660-1	CPA-MW-1D-0214	Total Re∞verable	Water	6010C	316214
680-98660-2	CPA-MW-1D-F(0.2)-0214	Dissolved	Water	6010C	316214
LCS 680-316214/2-A	Lab Control Sample	Total Recoverable	Water	6010C	316214
MB 680-316214/1-A	Method Blank	Total Recoverable	Water	6010C	316214
General Chemistry				element of the 12-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-	
en anno como en en en en en en en en en en en en en		er er samt er er er er er er er er er er er er er			
nalysis Batch: 31604					
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-98660-1	CPA-MW-1D-0214	Total/NA	Water	353.2	
LCS 680-316042/14	Lab Control Sample	Total/NA	Water	353.2	
MB 680-316042/13	Method Blank	Total/NA	Water	353.2	
nalysis Batch: 31624	3				
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-98660-1	CPA-MW-1D-0214	Total/NA	Water	325.2	
LCS 680-316243/20	Lab Control Sample	Total/NA	Water	325,2	
MB 680-316243/21	Method Blank	Total/NA	Water	325.2	
Analysis Batch: 31624	7				
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-98660-1	CPA-MW-1D-0214	Total/NA	Water	375.4	
LCS 680-316247/10	Lab Control Sample	Total/NA	Water	375.4	
MB 680-316247/15	Method Blank	Total/NA	Water	375.4	
Analysis Batch: 31659	8				
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-98660-1	CPA-MW-1D-0214	Total/NA	Water	415.1	
LCS 680-316598/33	Lab Control Sample	Total/NA	Water	415.1	
MB 680-316598/26	Method Blank	Total/NA	Water	415.1	
analysis Batch: 31660	0				
Lab Sample ID	Client Sample ID	Ргер Туре	Matríx	Method	Prep Batch
680-98660-2	CPA-MW-1D-F(0.2)-0214	Dissolved	Water	415.1	and the second s
LCS 680-316600/84	Lab Control Sample	Dissolved	Water	415.1	
MB 680-316600/85	Method Blank	Dissolved	Water	415.1	
nalysis Batch: 31704	9				
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-98660-1	CPA-MW-1D-0214	Total/NA	Water	310.1	
LCS 680-317049/6	Lab Control Sample	Total/NA	Water	310.1	
LCSD 680-317049/32	Lab Control Sample Dup	Total/NA	Water	310.1	
MB 680-317049/5	Method Blank	Total/NA	Water	310.1	

#### Lab Chronicle

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98660-1

SDG: KPS113

Client Sample ID: CPA-MW-1D-0214

Date Collected: 02/14/14 11:20 Date Received: 02/15/14 09:28 Lab Sample ID: 680-98660-1

Matrix: Water

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		250	317055	02/25/14 19:54	MMT	TAL SAV
Total/NA	Prep	3520C			316409	02/20/14 14:37	RBS	TAL SAV
Total/NA	Analysis	8270D		2	317112	02/25/14 14:52	SMC	TAL SAV
Total/NA	Prep	3520C	RE		316953	02/24/14 15:35	RBS	TAL SAV
Total/NA	Analysis	8270D	RE	2	317351	02/26/14 16:50	SMC	TAL SAV
Total/NA	Analysis	RSK-175		1	317026	02/25/14 14:46	TAR	TAL SAV
Total Recoverable	Prep	3005A			316214	02/19/14 09:21	BJB	TAL SAV
Total Recoverable	Analysis	6010C		1	316419	02/19/14 21:16	BCB	TAL SAV
Total/NA	Analysis	353.2		1	316042	02/15/14 17:54	GRX	TAL SAV
Total/NA	Analysis	325.2		2	316243	02/18/14 12:46	JME	TAL SAV
Total/NA	Analysis	375.4		1	316247	02/18/14 17:01	IME	TAL SAV

31659B 02/20/14 08:34 CMP

317049 02/24/14 18:06 LBH

Client Sample ID: CPA-MW-1D-F(0.2)-0214

Analysis

Analysis

415.1

310,1

Date Collected: 02/14/14 11:20

Total/NA

Total/NA

Date Received: 02/15/14 09:28

Lab Sample ID: 680-98660-2

TAL SAV

TAL SAV

Matrix: Water

	Batch	Batch		Dilution	Batch	Prepared			
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab	
Dissolved	Prep	3005A			316214	02/19/14 09:21	ВЈВ	TAL SAV	
Dissolved	Analysis	6010C		1	316419	02/19/14 21:21	BCB	TAL SAV	
Dissolved	Analysis	415.1		5	316600	02/20/14 19:40	CMP	TAL SAV	

Client Sample ID: 1Q14 LTM Trip Blank #8

Date Collected: 02/14/14 00:00

Date Received: 02/15/14 09:28

Lab Sample ID: 680-98660-3	5
----------------------------	---

Matrix: Water

	Batch	Batch		Dilution	Batch	Prepared		
Ргер Туре	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	82608		1	317055	02/25/14 16:31	MMT	TAL SAV

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

TestAmerica Savannah

IAR 1 3 2014 MM

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# MAR 1 3 2014 NM

#### Savannah

5102 LaRoche Avenue

# Chain of Custody Record



Savannah, GA 31404 phone 912.354.7858 fax 912.352.0165 TestAmerica Laboratories, Inc. Project Manager: Bob Billman Client Contact Site Contact: Michael Corbett Comment (U/A) (Section ) COC No: URS Corporation Tel/Fax: (314) 743-4108 Lab Contact: Michele Kersey Carrier: First COCs 1001 Highlands Plaza Drive West, Suite 300 Analysis Turnaround Time 21563600.0000/ St. Louis, MO 63110 Calendar (C) or Work Days (W) Chlacide by 325.2/Sulfate by 375.4 (314) 429-0100 Phone TAT if different from Below Dissolved Fe/Mn by 6910C SDG No. (314) 429-0462 FAX 2 weeks Project Name: 1Q14 LTM GW Sampling i week Site: Solutia WG Krummrich Facility 2 days Nitrate by 353,2 PO# 1 day Sample Sample Sample Date Time Sample Identification Type Matrix Cont Sample Specific Notes: CPA-MW-1D -0214 2 1 3 2 1120 G Water 16 3 CPA-MW-11)-F(0.2)-0214 Water 2 1120 1Q14 LTM Trip Blank # 8 Water 2 2 1 4 1 1 2 3,1 3 4 2 Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month) Possible Hazard Identification nown ☐ Return To Client sposal By Lab A ive For Non-Hazard - Flammable Skin [rritant son B Special Instructions/QC Requirements & Comments: 680-98660 0.200 Date/Time: Date/Time: Received by: Company: Relinquished by: « Company: 2/4/4 1300 URS Date/Time: Date/Time: Received by: Relinquished by: Company: Relinquished by: Company: Date/Time: Company: 02/15/14 0928 TA W

# Login Sample Receipt Checklist

Client: Solutia Inc.

Job Number: 680-98660-1

SDG Number: KPS113

List Source: TestAmerica Savannah

Login Number: 98660 List Number: 1

Creator: Conner, Keaton

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>N/A</td> <td></td>	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	•
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
ts the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	line B2 ph needs to be adju.
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <a href="mailto:smm">&lt;6mm</a> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

# **Certification Summary**

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98660-1

SDG: KPS113

# Laboratory: TestAmerica Savannah

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
	AFCEE		SAVLAB	
A2LA	DoD ELAP		399.01	02-28-15
A2LA	ISO/IEC 17025		399.01	02-28-15
Alabama	State Program	4	41450	06-30-14
Arkansas DEQ	State Program	6	88-0692	01-31-15
California	NELAP	9	3217CA	07-31-14
Colorado	State Program	8	N/A	12-31-14
Connecticut	State Program	1	PH-0161	03-31-15
Florida	NELAP	4	E87052	06-30-14
GA Dept. of Agriculture	State Program	4	N/A	06-30-14
Georgia	State Program	4	N/A	06-30-14
Georgia	State Program	4	803	06-30-14
Guam	State Program	9	09-005r	04-17-14
Hawaii	State Program	9	N/A	06-30-14
llinois	NELAP	5	200022	11-30-14
ndiana	State Program	5	N/A	06-30-14
owa	State Program	7	353	07-01-15
Kentucky (DW)	State Program	4	90084	12-31-14
Kentucky (UST)	State Program	4	18	06-30-14
ouisiana	NELAP	6	LA100015	12-31-14
Maine	State Program	1	GA00006	08-16-14
Maryland	State Program	3	250	12-31-14
Massachusetts .	State Program .	1	M-ĠA006	06-30-14
Michigan	State Program	5	9925	06-30-14
Mississippi	State Program	4	N/A	06-30-14
Montana	State Program	8	CERT0081	01-01-15
Nebraska	State Program	7	TestAmerica-Savannah	06-30-14
New Jersey	NELAP	2	GA769	06-30-14
New Mexico	State Program	6	N/A	06-30-14
New York	NELAP	2	10842	03-31-14
North Carolina DENR	State Program	4	269	12-31-14
North Carolina DHHS	State Program	4	13701	07-31-14
Okłahoma	State Program	6	9984	08-31-14
Pennsylvania	NELAP	3	68-00474	06-30-14
Puerto Rico	State Program	2	GA00006	12-31-14
South Carolina	State Program	4	98001	06-30-14
Tennessee	State Program	4	TN02961	06-30-14
Texas	NELAP	6	T104704185-08-TX	11-30-14
JSDA	Federal		SAV 3-04	04-07-14
Virginia	NELAP	3	460161	06-14-14
Washington	State Program	10	C1794	06-10-14
West Virginia DEP	State Program	3	94	06-30-14
West Virginia DHHR	State Program	3	9950C	12-31-14
Nisconsin	State Program	5	999819810	08-31-14
Wyoming	State Program	8	8TMS-L	06-30-14

# Solutia Krummrich Data Review WGK LTM 1Q14

Laboratory SDG: KPS114

Data Reviewer: Melissa Mansker Peer Reviewer: Elizabeth Kunkel

Date Reviewed: 3/13/2014

Guidance: USEPA National Functional Guidelines for Superfund Organic Methods Data Review 2008. USEPA National Functional Guidelines for Superfund

**Inorganic Data Review 2010** 

Work Plan: Revised Long-Term Monitoring Program (LTMP) Work Plan (Solutia

2009)

Sample Identification						
GWE-3D-0214	GWE-3D-F(0.2)-0214					
LTM Trip Blank #9						

# 1.0 Data Package Completeness

Were all items delivered as specified in the QAPP and COC as appropriate?

Yes

#### 2.0 Laboratory Case Narrative \ Cooler Receipt Form

Were problems noted in the laboratory case narrative or cooler receipt form?

Yes, the laboratory case narrative indicated samples were diluted due to high levels of target analytes. This issue is addressed further in the appropriate section below.

The cooler receipt form indicated that two of two coolers were received by the laboratory at temperatures of  $0.2^{\circ}$ C and  $0.8^{\circ}$ C which is outside the  $4^{\circ}$ C  $\pm 2^{\circ}$ C criteria. The samples were received in good condition; therefore no qualification of data was required.

#### 3.0 Holding Times

Were samples extracted/analyzed within applicable limits?

Yes

#### 4.0 Blank Contamination

Were any analytes detected in the Method Blanks, Field Blanks or Trip Blanks?

No

# 5.0 Laboratory Control Sample

Were LCS recoveries within evaluation criteria?

Yes

# 6.0 Surrogate Recoveries

Were surrogate recoveries within evaluation criteria?

Yes

# 7.0 Matrix Spike and Matrix Spike Duplicate Recoveries

Were MS/MSD samples collected as part of this SDG?

Yes, although not requested, sample GWE-3D-F(0.2)-0214 was spiked and analyzed for dissolved organic carbon.

Were MS/MSD recoveries within evaluation criteria?

Yes

# 8.0 Internal Standard (IS) Recoveries

Were internal standard area recoveries within evaluation criteria?

Yes

# 9.0 Laboratory Duplicate Results

Were laboratory duplicate samples collected as part of this SDG?

No

# 10.0 Field Duplicate Results

Were field duplicate samples collected as part of this SDG?

No

#### 10.0 Sample Dilutions

For samples that were diluted and nondetect, were undiluted results also reported?

Not applicable; analytes were detected in samples that were diluted.

# 11.0 Additional Qualifications

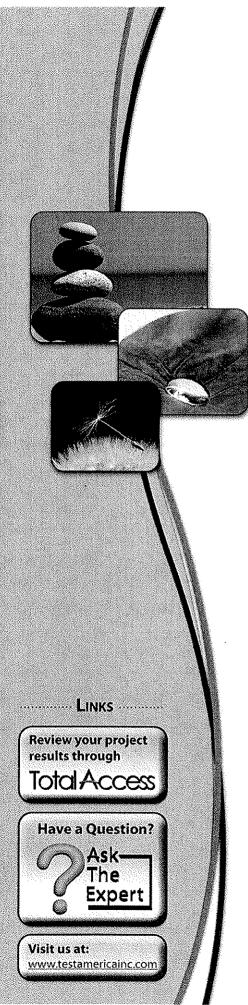
Were additional qualifications applied?

No

# SDG KPS114

Results of Samples from Monitoring Well:

GWE-3D



# **TestAmerica**

THE LEADER IN ENVIRONMENTAL TESTING

# **ANALYTICAL REPORT**

TestAmerica Laboratories, Inc. TestAmerica Savannah 5102 LaRoche Avenue Savannah, GA 31404 Tel: (912)354-7858

TestAmerica Job ID: 680-98737-1 TestAmerica Sample Delivery Group: KPS114

Client Project/Site: WGK Long Term Monitoring - 1Q14

For:

Solutia Inc.

575 Maryville Centre Dr. Saint Louis, Missouri 63141

Attn: Mr. Jerry Rinaldi

Michele RKusey

Authorized for release by: 3/4/2014 4:46:38 PM

Michele Kersey, Project Manager I (912)354-7858 michele.kersey@testamericainc.com

Reviewed on MAR 1 3 2014 W

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

# SDG: KPS114

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Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98737-1

SDG: KPS114

Job ID: 680-98737-1

Laboratory: TestAmerica Savannah

Narrative

#### **CASE NARRATIVE**

Client: Solutia Inc.

Project: WGK Long Term Monitoring - 1Q14

Report Number: 680-98737-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In the event of interference or analytes present at high concentrations, samples may be diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

#### RECEIPT

The samples were received on 2/19/2014 9:36 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 0.2° C and 0.8° C.

#### **VOLATILE ORGANIC COMPOUNDS (GC-MS)**

Samples GWE-3D-0214 (680-98737-1) and LTM Trip Blank #9 (680-98737-3) were analyzed for Volatile Organic Compounds (GC-MS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 02/26/2014 and 02/27/2014.

Sample GWE-3D-0214 (680-98737-1)[25X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No difficulties were encountered during the volatiles analysis.

All quality control parameters were within the acceptance limits.

#### **DISSOLVED GASES**

Sample GWE-3D-0214 (680-98737-1) was analyzed for dissolved gases in accordance with RSK-175. The samples were analyzed on 02/26/2014.

No difficulties were encountered during the dissolved gases analysis.

All quality control parameters were within the acceptance limits.

#### METALS (ICP)

Sample GWE-3D-F(0.2)-0214 (680-98737-2) was analyzed for Metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared on 02/20/2014 and analyzed on 02/25/2014.

No difficulties were encountered during the metals analysis.

All quality control parameters were within the acceptance limits.

#### METALS (ICP)

Sample GWE-3D-0214 (680-98737-1) was analyzed for Metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared on 02/20/2014 and analyzed on 02/25/2014.

No difficulties were encountered during the metals analysis.

All quality control parameters were within the acceptance limits.

MAR 1 3 2014

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98737-1

SDG: KPS114

Job ID: 680-98737-1 (Continued)

Laboratory: TestAmerica Savannah (Continued)

#### ALKALINITY

Sample GWE-3D-0214 (680-98737-1) was analyzed for alkalinity in accordance with EPA Method 310.1. The samples were analyzed on 02/24/2014.

No difficulties were encountered during the alkalinity analysis.

All quality control parameters were within the acceptance limits.

#### CHLORIDE

Sample GWE-3D-0214 (680-98737-1) was analyzed for Chloride in accordance with EPA Method 325.2. The samples were analyzed on 02/25/2014.

Sample GWE-3D-0214 (680-98737-1)[10X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No difficulties were encountered during the chloride analysis.

All quality control parameters were within the acceptance limits.

#### **NITRATE-NITRITE AS NITROGEN**

Sample GWE-3D-0214 (680-98737-1) was analyzed for nitrate-nitrite as nitrogen in accordance with EPA Method 353.2. The samples were analyzed on 02/19/2014.

No difficulties were encountered during the nitrate-nitrite analysis.

All quality control parameters were within the acceptance limits.

#### SULFATE

Sample GWE-3D-0214 (680-98737-1) was analyzed for sulfate in accordance with EPA Method 375.4. The samples were analyzed on 02/25/2014.

Sample GWE-3D-0214 (680-98737-1)[10X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No difficulties were encountered during the sulfate analysis.

All quality control parameters were within the acceptance limits.

#### **TOTAL ORGANIC CARBON**

Sample GWE-3D-0214 (680-98737-1) was analyzed for total organic carbon in accordance with EPA Method 415.1. The samples were analyzed on 03/03/2014.

No difficulties were encountered during the TOC analysis.

All quality control parameters were within the acceptance limits.

#### **DISSOLVED ORGANIC CARBON (DOC)**

Sample GWE-3D-F(0.2)-0214 (680-98737-2) was analyzed for Dissolved Organic Carbon (DOC) in accordance with EPA Method 415.1. The samples were analyzed on 02/26/2014.

No difficulties were encountered during the DOC analysis.

All quality control parameters were within the acceptance limits.

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TestAmerica Savannah

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# Sample Summary

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98737-1

SDG: KPS114

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-98737-1	GWE-3D-0214	Water	02/18/14 12:25	02/19/14 09:36
680-98737-2	GWE-3D-F(0.2)-0214 //	Water	02/18/14 12:25	02/19/14 09:36
680-98737-3	LTM Trip Blank #9	Water	02/18/14 00:00	02/19/14 09:36



# **Method Summary**

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98737-1

SDG: KP\$114

Method	Method Description	Protocol	Laboratory
8260B	Volatife Organic Compounds (GC/MS)	SW846	TAL SAV
RSK-175	Dissolved Gases (GC)	RSK	TAL SAV
6010C	Metals (ICP)	SW846	TAL SAV
310.1	Alkalinity	MCAVW	TAL SAV
325.2	Chloride	MCAVW	TAL SAV
353.2	Nitrogen, Nitrate-Nitrite	MCAWW	TAL SAV
375.4	Sulfate	MCAWW	TAL SAV
415.1	TOC	MCAWW	TAL SAV
415.1	DDC	MCAVW	TAL SAV

#### Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

RSK = Sample Prep And Calculations For Dissolved Gas Analysis In Water Samples Using A GC Headspace Equilibration Technique, RSKSOP-175, Rev. 0, 8/11/94, USEPA Research Lab

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

#### Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

# Definitions/Glossary

Client: Solutia Inc. TestAmerica Job ID: 680-98737-1 Project/Site: WGK Long Term Monitoring - 1Q14 SDG: KPS114 Qualifiers GC/MS VOA Qualifier Qualifier Description Indicates the analyte was analyzed for but not detected. GC VOA Qualifier Qualifier Description indicates the analyte was analyzed for but not detected. Metals Qualifier Qualifier Description Ū Indicates the analyte was analyzed for but not detected. **General Chemistry** Qualifier Qualifier Description Indicates the analyte was analyzed for but not detected. Glossary Abbreviation These commonly used abbreviations may or may not be present in this report. Listed under the "D" column to designate that the result is reported on a dry weight basis %R Percent Recovery CNF Contains no Free Liquid DER Duplicate error ratio (normalized absolute difference) Dil Fac Dilution Factor DL, RA, RE, IN Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample DLC Decision level concentration MDA Minimum detectable activity ₽DL Estimated Detection Limit MDC Minimum detectable concentration MDL Method Detection Limit ML Minimum Level (Dioxin) NC Not Calculated ND Not detected at the reporting limit (or MDL or EDL if shown) POL Practical Quantitation Limit QC Quality Control

RER

RI

RPD

TEF

TEQ

Relative error ratio

Toxicity Equivalent Factor (Dioxin)

Toxicity Equivalent Quotient (Dioxin)

Reporting Limit or Requested Limit (Radiochemistry)

Relative Percent Difference, a measure of the relative difference between two points

# **Detection Summary**

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98737-1

Lab Sample ID: 680-98737-1

Lab Sample ID: 680-98737-2

Lab Sample ID: 680-98737-3

SDG: KPS114

# Client Sample ID: GWE-3D-0214

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	ם	Method	Prep Type
Benzene	57		25		ug/L	25		8260B	Total/NA
Chlorobenzene	2200		25		ug/L	25		8260B	Total/NA
1,2-Dichlorobenzene	28		25		ug/L	25		8260B	Total/NA
1,4-Dichlorobenzene	240		25		ug/L	25		8260B	Total/NA
Methane	90		0.58		ug/L	1		RSK-175	Total/NA
fron	17		0.050		mg/L	1		6010C	Total
									Recoverabl
Manganese	0.54		0.010		mg/L	1		6010C	Total
									Recoverable
Chloride	310		10		mg/L	10		325.2	Total/NA
Sulfate	330		50		mg/L	10		375.4	Total/NA
Total Organic Carbon	4.5		1.0		mg/L	1		415.1	Tota!/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Alkalinity	400	***************************************	5.0		mg/L	1	_	310.1	Total/NA
Carbon Dioxide, Free	30		5.0		mg/L	1		310.1	Total/NA

# Client Sample ID: GWE-3D-F(0.2)-0214

Analyte	Result Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron, Dissolved	16	0.050		mg/L			6010C	Dissolved
Manganese, Dissolved	0.53	0.010		mg/L	1		6010C	Dissolved
Dissolved Organic Carbon	4.7	1.0		mg/L	1		415.1	Dissolved

Client Sample ID: LTM Trip Blank #9

No Detections.

This Detection Summary does not include radiochemical test results.

MAR 1 3 2014

Client: Solutia Inc.

Alkalinity

Carbon Dioxide, Free

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98737-1

SDG: KPS114

Client Sample ID: GWE-3D-0214

Lab Sample ID: 680-98737-1 Date Collected: 02/18/14 12:25

Matrix: Water

Date Received: 02/19/14 09:3								Matrix	v. wate
Method: 8260B - Volatile Or	-	•	DI.	AUD	11-:4	5	Dropprod	Anglycod	Dil Fa
Analyte		Qualifier	RL	MDL		D	Prepared	Analyzed 02/26/14 15:25	D# Fa
Benzene	57		25		ug/Ł			02/26/14 15:25	
Chlorobenzene	2200		25		ug/L				2
1,2-Dichlorobenzene	28		25		ug/L			02/26/14 15:25	2
1,3-Dichlorobenzene	25	U	25		ug/Ł			02/26/14 15:25	2
1,4-Dichlorobenzene	240		25		ug/L			02/26/14 15:25	2
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
4-Bromofluorobenzene	102		70 130					02/26/14 15:25	2
Dibromofluoromethane	90		70 - 130					02/26/14 15:25	
Toluene-d8 (Surr)	98		70 - 130					02/26/14 15:25	:
Method: RSK-175 - Dissolve	, ,								
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil F
Ethane	1.1	U	1.1		ug/L			02/26/14 17:20	
Ethylene	1.0	υ	1.0		ug/L			02/26/14 17:20	
Methane	90		0.58		ug/L			02/26/14 17:20	
Method: 6010C - Metals (IC)	P) - Total Recoverat	ole							
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil F
Iron	17		0.050	***************************************	mg/L		02/20/14 16:48	02/25/14 18:26	
Manganese	0.54	•	0.010		mg/ <u>(</u> _		02/20/14 16:48	02/25/14 18:26	
General Chemistry									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil F
Chloride	310		10		mg/L			02/25/14 14:02	
Nitrate as N	0,050	U	0.050		mg/L			02/19/14 13:54	
Sulfate	330		50		mg/L			02/25/14 13:53	
Total Organic Carbon	4.5		1.0		mg/L			03/03/14 05:27	
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil F

5.0

5.0

mg/L

mg/L

400

30

02/24/14 17:12

02/24/14 17:12

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98737-1

SDG: KPS114

Client Sample ID: GWE-3D-F(0.2)-0214

Date Collected: 02/18/14 12:25 Date Received: 02/19/14 09:36

Dissolved Organic Carbon

Lab Sample ID: 680-98737-2

02/26/14 17:58

Matrix: Water

	Method: 6010C - Metals (ICP) - Dissolved	i								
-	Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Iron, Dissolved	16	E. C. Postor P. P. Postor I. C. Construction and Construc	0.050	***************************************	mg/L		02/20/14 16:48	02/25/14 18:30	1
-	Manganese, Dissolved	0.53		0.010		mg/L		02/20/14 16:48	02/25/14 18:30	1
Control of the second control of the control	General Chemistry - Dissolved Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac

1.0

4.7

mg/L

3

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98737-1

SDG: KPS114

Client Sample ID: LTM Trip Blank #9

Date Collected: 02/18/14 00:00 Date Received: 02/19/14 09:36 Lab Sample ID: 680-98737-3

Matrix: Water

Analyte	Result	Qualifier	RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	ug/L			02/27/14 17:42	1
Chiorobenzene	1.0	U	1.0	ug/L			02/27/14 17:42	1
1,2-Dichlorobenzene	1.0	U	1.0	υg/L			02/27/14 17:42	1
1,3-Dichlorobenzene	1.0	U	1.0	ug/L			02/27/14 17:42	1
1,4-Dichlorobenzene	1.0	U	1.0	ug/L			02/27/14 17:42	1

Surrogate	%Recovery	Qualifier	Limits	Prepared Analyzed	Dil Fac
4-Bromofluorobenzene	86	***************************************	70 - 130	02/27/14 17:42	1
 Dibromofluoromethane	102		70 - 130	02/27/14 17:42	1
Toluana, d8 (Surr)	01		70 120	02/27/14 17:42	1

8





#### **Surrogate Summary**

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98737-1

SDG: KPS114

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water Prep Type: Total/NA

				Percent Surro	gate Recovery (Acceptance Limits)
		BFB	DBFM	TOL	
ab Sample ID	Client Sample ID	(70-130)	(70-130)	(70-130)	
680-98737-1	GWE-3D-0214	102	90	98	
580-98737-3	LTM Trip Blank #9	86	102	91	
LCS 680-317263/4	Lab Control Sample	99	85	103	
_CS 680-317585/4	Lab Control Sample	85	96	95	
CSD 680-317263/5	Lab Control Sample Dup	97	84	99	
CSD 680-317585/5	Lab Control Sample Dup	87	96	99	
MB 680-317263/9	Method Blank	99	93	98	
MB 680-317585/8	Method Blank	<b>B</b> 9	101	90	

Surrogate Legend

BFB = 4-Bromofluorobenzene

DBFM = Dibromofluoromethane

TOL = Toluene-dB (Surr)

TestAmerica Savannah

MAR 1 3 2014

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98737-1

02/26/14 13:13

Prep Type: Total/NA

Prep Type: Total/NA

Client Sample ID: Lab Control Sample

Client Sample ID: Lab Control Sample Dup

SDG: KPS114

#### Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 680-317263/9 Client Sample ID: Method Blank Matrix: Water Prep Type: Total/NA

Analysis Batch: 317263

Analysis Datch: 317203									
er trees	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Велгепе	2.0	U	2.0		ug/L			02/26/14 13:13	2
Chlorobenzene	2.0	U	2.0		ug/L			02/26/14 13:13	2
1,2-Dichlorobenzene	2.0	U	2.0		ug/L			02/26/14 13:13	2
1,3-Dichlorobenzene	2.0	U	2.0		ug/L			02/26/14 13:13	2
1,4-Dichlorobenzene	2.0	U	2.0		ug/L			02/26/14 13:13	2
	MB	MB							
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dìl Fac
4-Bromofluorobenzene	99		70 - 130			•		02/26/14 13:13	2
Dibromofuoromothano	03		70 120					02/26/14 13:13	2

Lab Sample ID: LCS 680-317263/4

Matrix: Water

Toluene-d8 (Surr)

Analysis Batch: 317263

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	 50.0	50.2		ug/L	and P	100	74 - 123	***************************************
Chlorobenzene	50.0	46.1		ug/L		92	79 - 120	
1,2-Dichlorobenzene	50,0	46.8		ug/L		94	77 - 124	
1,3-Dichlorobenzene	50.0	47.5		ug/L		95	79 - 123	
1,4-Dichlorobenzene	50.0	46.5		ug/L		93	76 - 124	

70.130

LCS LCS %Recovery Qualifier Limits Surrogate 70 - 130 4-Bromofluorobenzene 99 Dibromofluoromethane 85 70 - 130 Toluene-d8 (Surr) 103 70 - 130

Lab Sample ID: LCSD 680-317263/5

Matrix: Water

Analysis Batch: 31/263									
	Spike	LCSD	LCSD			%Rec.		RPD	
Analyte	Added	Result	Qualifier Unit	D	%Rec	Limits	RPD	Limit	
Benzene	50.0	48.5	ug/L		97	74 - 123	3	30	
Chlorobenzene	50.0	45.4	ug/Ł		91	79.120	1	30	
1,2-Dichlorobenzene	50.0	47.6	ug/L		95	77 - 124	2	30	
1,3-Dichlorobenzene	50.0	48.4	ug/L		97	79 - 123	2	30	
1,4-Dichlorobenzene	50.0	47.8	ug/L		96	76 - 124	3	30	

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene	97		70 - 130
Dibromofluoromethane	84		70 - 130
Toluene-d8 (Surr)	99		70 - 130

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98737-1

SDG: KPS114

#### Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 680-317585/8 Client Sample ID: Method Blank Matrix: Water Prep Type: Total/NA

Analysis Batch: 317585

	мв	мв						1
Analyte	Result	Qualifier	RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1,0	U	1.0	ug/L			02/27/14 16:44	1
Chlorobenzene	1.0	U	1.0	ug/L			02/27/14 16:44	1
1,2-Dichtorobenzene	1.0	U	1.0	ug/L			02/27/14 16:44	1
1,3-Dichlorobenzene	1.0	U	1.0	ug/L			02/27/14 16:44	1
1,4-Dichtorobenzene	1.0	U	1.0	ug/L			02/27/14 16:44	1
	мв	МВ						
t _						_		

1		MB	MB					- 83
10000	Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac	
100000	4-Bromofluorobenzene	89		70 - 130	As core as a construction of the AAAV of Administration for the Name of States (States States	02/27/14 16:44	1	
	Dibromofluoromethane	101		70 - 130		02/27/14 16:44	1	
	Toluene-d8 (Surr)	90		70 - 130		02/27/14 16:44	1	10

Lab Sample ID: LCS 680-317585/4 Client Sample ID: Lab Control Sample Matrix: Water Prep Type: Total/NA

Analysis Batch: 317585

	Spike	LC\$	LCS				%Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
Benzene	50,0	48,3		ug/L		97	74 - 123
Chlorobenzene	50.0	47.7		ug/L		95	79 - 120
1,2-Dichlorobenzene	50.0	• 47.5		ug/L		• 95	77 - 124
1,3-Dichlorobenzene	50.0	48.3		ug/L		97	79 - 123
1,4-Dichlorobenzene	50.0	47.8		ug/L		96	76 - 124

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene	85		70 - 130
Dibromofluoromethane	96		70 - 130
Toluene-d8 (Surr)	95		70 - 130

Lab Sample ID: LCSD 680-317585/5 Client Sample ID: Lab Control Sample Dup Matrix: Water Prep Type: Total/NA

Analysis Batch: 317585

	Spike	LC\$D	LCSD		%Rec.		RPD
Analyte	Added	Result	Qualifier Unit	D %Rec	Limits	RPD	Limit
Benzene	50.0	50.2	ug/L	100	74 - 123	4	30
Chlorobenzene	50.0	49.5	ug/L	99	79 - 120	4	30
1,2-Dichlorobenzene	50.0	49.0	ug/L	98	77 - 124	3	30
1,3-Dichlorobenzene	50.0	49.7	ug/L	99	79 - 123	3	30
1,4-Dichlorobenzene	50.0	48.6	ug/L	97	76 - 124	2	30

LCSD	LCSD	
%Recovery	Qualifier	Limits
87		70 - 130
96		70 - 130
99		70 - 130
	%Recovery 87 96	96

TestAmerica Savannah

MAR I 8 2014

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98737-1

SDG: KPS114

#### Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 680-317227/8 Client Sample ID: Method Blank Matrix: Water Prep Type: Total/NA

Analysis Batch: 317227

-	MB	MB							
Analyte	Result	Qualifier	RL	₩DL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	1.1	U	1.1		ug/L			02/26/14 15:27	1
Ethylene	1.0	U	1.0		ug/L			02/26/14 15:27	1
Methane	0.58	U	0.58		ug/L			02/26/14 15:27	1
Methane (TCD)	390	U	390		ug/L			02/26/14 15:27	1

Lab Sample ID: LCS 680-317227/3 Client Sample ID: Lab Control Sample Matrix: Water Prep Type: Total/NA

Analysis Batch: 317227

Spike LCS LCS %Rec. Analyte Added Result Qualifier Unit %Rec Limits Ethane 288 300 ug/L 104 75 - 125 Ethylene 269 290 ug/L 108 75 - 125 96 75 - 125 Methane 154 147 ug/L

Lab Sample ID: LCS 680-317227/5 Client Sample ID: Lab Control Sample Matrix: Water Prep Type: Total/NA

Analysis Batch: 317227

Spike LCS LCS %Rec. Added Result Qualifier Unit %Rec Limits Methane (TCD) 1920 ug/L 102 75 - 125

Lab Sample ID: LCSD 680-317227/4 Client Sample ID: Lab Control Sample Dup Matrix: Water Prep Type: Total/NA

Analysis Batch: 317227

Spike LCSD LCSD %Rec. RPD Limits Result Qualifier %Rec Limit Analyte Added Unit RPD 293 75 - 125 Ethane 288 ug/L 101 2 30 Ethylene 269 282 ug/L 105 75 - 125 3 30 Methane 154 145 ug/L 75 - 125 30

Lab Sample ID: LCSD 680-317227/6 Client Sample ID: Lab Control Sample Dup Matrix: Water Prep Type: Total/NA Analysis Batch: 317227 LCSD LCSD %Rec. RPD Spike

%Rec Limits Limit Analyte Added Result Qualifier Unit D RPD 1920 2000 75 - 125 Methane (TCD) ug/L 104 2 30

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 680-316575/1-A Client Sample ID: Method Blank Matrix: Water Prep Type: Total Recoverable Analysis Batch: 317292 Prep Batch: 316575

	WR	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.050	U	0.050		mg/L		02/20/14 16:48	02/25/14 18:17	1
Iron, Dissolved	0.050	υ	0.050		mg/L		02/20/14 16:48	02/25/14 18:17	1
Manganese	0.010	υ	0.010		mg/L		02/20/14 16:48	02/25/14 18:17	1
Manganese, Dissolved	0.010	U	0.010		mg/L		02/20/14 16:48	02/25/14 18:17	1















Client:	Solutia	Inc.
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Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98737-1

SDG: KPS114

Method:	6010C -	Metals	(ICP)	(Continued)

Lab Sample ID: LCS 680-316575/2-A							Client Sample ID: Lab Control Sample			
Matrix: Water						Prep Type: Total Recoverable				
Analysis Batch: 317292							Prep B	Batch: 316575		
	Spike	LCS	LCS				%Rec.			
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits			
Iron	5.00	5.24		mg/L		105	75 - 125			
Iron, Dissolved	5.00	5.24		mg/L		105	75 - 125			
Manganese	0.500	0.548		mg/L		110	75 - 125			
Manganese, Dissolved	0.500	0.548		mg/L		110	75 - 125			

#### Method: 310.1 - Alkalinity

Lab Sample ID: MB 680-317049/5	Client Sample ID: Method Blank
Matrix: Water	Prep Type: Total/NA
Analysis Retain 247040	

1	, many one Battern of the									
		MB	MB							
	Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Constant.	Alkalinity	5.0	U	5.0	Maria Maria Maria Maria Maria Maria Maria Maria Maria Maria Maria Maria Maria Maria Maria Maria Maria Maria Ma	mg/L			02/24/14 16:36	1
1	Carbon Dioxide, Free	5.0	U	5.0		mg/L			02/24/14 16:36	1

Lab Sample ID: LCS 680-317049/6						Client Sample ID: Lab Control Sample			
Matrix: Water							Prep 1	ype: Total/NA	
Analysis Batch: 317049									
	Spike	. LCS	LCS				%Rec.		
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits		
Alkalinity	250	223	desar handstake desirent har de de de	mg/L		89	80 - 120		

	Lab Sample 10: LCSD 680-317049/32	Client Sample ID: Lab Control Sample Dup								
1	Matrix: Water						Prep T	ype: To	tal/NA	
	Analysis Batch: 317049									
		Spike	LCSD	LCSD				%Rec.		RPD
	Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
	Alkalinity	250	241		mg/L		96	80 - 120	8	30

#### Method: 325.2 - Chloride

Lab Sample ID: MB 680-317298/26 Matrix: Water Analysis Batch: 317298							Client S	ample ID: Metho Prep Type: T	
-	MB	мв							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1.0	Ū	1.0		mg/L			02/25/14 12:48	1
Lab Sample ID: LCS 680-317298/18						CI	ient Sample	ID: Lab Control	Sample

Lab Sample ID: LCS 680-317298/18					Clien	t Sample	ID: Lab C	ontrol Sample
Matrix: Water							Prep 1	Type: Total/NA
Analysis Batch: 317298								
· ·	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Chloride	25.0	26.3		mg/L		105	85 - 115	

Client: Solutia Inc. Project/Site: WGK Long Term Monitor	ing - 1Q14						TestAme	rica Job ID: 680- SDG:	KPS114
Method: 353.2 - Nitrogen, Nitra	te-Nitrite								
Lab Sample ID: MB 680-316308/13 Matrix: Water							Client S	ample ID: Metho Prep Type:	
Analysis Batch: 316308	ш	мв							
Analyte	_	Qualifier	RL	MDL Unit		D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.050		0.050				· repared	02/19/14 13:36	1
·									
Lab Sample ID: LCS 680-316308/14						Clie	ent Sample	ID: Lab Contro	
Matrix: Water								Prep Type:	i otai/NA
Analysis Batch: 316308			Snika	LCS LCS				%Rec.	
Analyte			Spike Added	Result Qualifier	Unit		D %Rec	Limits	
Nitrate as N	AND THE PARTY OF T	managaman nami	0,500	0.526	mg/L		105	90 - 110	
Nitrate Nitrite as N			1,00	1,02	mg/L		102	90 - 110	
Nitrite as N			0,500	0,492	mg/L		98	90 - 110	
Nuite 45 M			0.00,0	0,492	nigru		30	302110	
lethod: 375.4 - Sulfate	No. 201 (1981)								
Lab Sample ID: MB 680-317304/8							Client S	ample ID: Meth	
Matrix: Water								Prep Type:	i otai/NA
Analysis Batch: 317304	ма	MB							
Analyte		Qualifier	RL	, MDL Unit		D	Prepared	Analyzed	Dil Fa
Sulfate		U	5.0					02/25/14 13:55	
Matrix: Water						Cli	ent Sample	ID: Lab Contro Prep Type:	-
Matrix: Water Analysis Batch: 317304			Spike	LCS LCS		Cli	·	Prep Type:	-
Matrix: Water Analysis Batch: 317304 <sup>Analyte</sup>			Added	Result Qualifier	Unit	Cli	D %Rec	Prep Type:  %Rec. Limits	-
Matrix: Water Analysis Batch: 317304 <sup>Analyte</sup>			•		Unit mg/L	Cli	·	Prep Type:	-
Matrix: Water Analysis Batch; 317304 Analyte Sulfale			Added	Result Qualifier		Cli	D %Rec	Prep Type:  %Rec. Limits	-
Matrix: Water Analysis Batch: 317304 Analyte Sulfate lethod: 415.1 - DOC Lab Sample ID: MB 680-317615/2-A			Added	Result Qualifier		Cli	D %Rec 104	Prep Type:  %Rec. Limits	Total/NA
Matrix: Water Analysis Batch: 317304 Analyte Sulfate lethod: 415.1 - DOC Lab Sample ID: MB 680-317615/2-A Matrix: Water			Added	Result Qualifier		Cli	D %Rec 104	Prep Type:  %Rec. Limits  75 - 125  sample ID: Meth	Total/NA
Matrix: Water Analysis Batch: 317304 Analyte Sulfate lethod: 415.1 - DOC Lab Sample ID: MB 680-317615/2-A Matrix: Water	MB	мв	Added	Result Qualifier		Cli	D %Rec 104	Prep Type:  %Rec. Limits  75 - 125  sample ID: Meth	Total/NA
Matrix: Water Analysis Batch: 317304 Analyte Sulfate lethod: 415.1 - DOC Lab Sample ID: MB 680-317615/2-A Matrix: Water Analysis Batch: 317610	Result	Qualifier	Added 20,0	Result Qualifier 20.8  MDL Unit	mg/L	Cli	D %Rec 104	Prep Type:  %Rec. Limits  75 - 125  Sample ID: Meth Prep Type: D	Total/N/ od Blanl
Matrix: Water Analysis Batch: 317304 Analyte Sulfate lethod: 415.1 - DOC Lab Sample ID: MB 680-317615/2-A Matrix: Water Analysis Batch: 317610	Result		Added 20.0	Result Qualifier 20.8  MDL Unit	mg/L		D %Rec 104	Prep Type:  %Rec. Limits  75 - 125  Sample ID: Meth Prep Type: D	od Błani issolved
Matrix: Water Analysis Batch: 317304  Analyte Sulfate  Lethod: 415.1 - DOC  Lab Sample ID: MB 680-317615/2-A  Matrix: Water Analysis Batch: 317610  Analyte Dissolved Organic Carbon  Lab Sample ID: LCS 680-317615/1-/	Result	Qualifier	Added 20,0	Result Qualifier 20.8  MDL Unit	mg/L	D	D %Rec 104  Client S	Prep Type:  %Rec. Limits  75 - 125  Gample ID: Meth Prep Type: D  Analyzed  02/26/14 17:27	od Blanissolve
Matrix: Water Analysis Batch: 317304  Analyte Sulfate  Lethod: 415.1 - DOC  Lab Sample ID: MB 680-317615/2-A  Matrix: Water Analysis Batch: 317610  Analyte Dissolved Organic Carbon  Lab Sample ID: LCS 680-317615/1-/  Matrix: Water	Result	Qualifier	Added 20,0	Result Qualifier 20.8  MDL Unit	mg/L	D	D %Rec 104  Client S	Prep Type:  %Rec. Limits  75 - 125  Sample ID: Meth Prep Type: D  Analyzed  02/26/14 17:27	od Blani issolve Dii Fa
Matrix: Water Analysis Batch: 317304  Analyte Sulfate  Lethod: 415.1 - DOC  Lab Sample ID: MB 680-317615/2-A  Matrix: Water Analysis Batch: 317610  Analyte Dissolved Organic Carbon  Lab Sample ID: LCS 680-317615/1-/  Matrix: Water	Result	Qualifier	Added 20.0 RL	Result Qualifier 20.8  MDL Unit mg/L	mg/L	D	D %Rec 104  Client S	Prep Type:  %Rec. Limits  75 - 125  Gample ID: Meth Prep Type: D  Analyzed  02/26/14 17:27  PID: Lab Contro Prep Type: D	od Blani issolve Dii Fa
Matrix: Water Analysis Batch: 317304  Analyte Sulfate  Lethod: 415.1 - DOC  Lab Sample ID: MB 680-317615/2-A Matrix: Water Analysis Batch: 317610  Analyte Dissolved Organic Carbon  Lab Sample ID: LCS 680-317615/1-/ Matrix: Water Analysis Batch: 317610	Result	Qualifier	Added 20.0 RL 1.0	Result Qualifier 20.8  MDL Unit mg/L	mg/L	D	D %Rec 104  Client S  Prepared  ent Sample	Prep Type:  %Rec. Limits  75 - 125  Gample ID: Meth Prep Type: D  Analyzed 02/26/14 17:27  PID: Lab Contro Prep Type: D  %Rec.	od Blani issolve Dii Fa
Matrix: Water Analysis Batch: 317304  Analyte Sulfate  Lethod: 415.1 - DOC  Lab Sample ID: MB 680-317615/2-A  Matrix: Water Analysis Batch: 317610  Analyte Dissolved Organic Carbon  Lab Sample ID: LCS 680-317615/1-A  Matrix: Water Analysis Batch: 317610	Result	Qualifier	Added 20.0 RL	Result Qualifier 20.8  MDL Unit mg/L	mg/L	D	D %Rec 104  Client S	Prep Type:  %Rec. Limits  75 - 125  Gample ID: Meth Prep Type: D  Analyzed  02/26/14 17:27  PID: Lab Contro Prep Type: D	od Blani issolve Dii Fa
Matrix: Water Analysis Batch: 317304  Analyte Sulfate  Lethod: 415.1 - DOC  Lab Sample ID: MB 680-317615/2-A  Matrix: Water Analysis Batch: 317610  Analyte Dissolved Organic Carbon  Lab Sample ID: LCS 680-317615/1-A  Matrix: Water Analysis Batch: 317610  Analyte Dissolved Organic Carbon  Lab Sample ID: 680-98737-2 MS	Result	Qualifier	Added 20,0  RI 1.0  Spike Added	Result Qualifier  20.8  MDL Unit mg/L  LCS LCS  Result Qualifier	mg/L Unit	Cli	D %Rec 104  Client S  Prepared  ent Sample  D %Rec 102	Prep Type:  %Rec. Limits 75 - 125  cample ID: Meth Prep Type: D  Analyzed 02/26/14 17:27  Prep Type: D  %Rec. Limits 80 - 120	od Błanissolve
Matrix: Water Analysis Batch: 317304  Analyte Sulfate  Lethod: 415.1 - DOC  Lab Sample ID: MB 680-317615/2-A  Matrix: Water Analysis Batch: 317610  Analyte Dissolved Organic Carbon  Lab Sample ID: LCS 680-317615/1-A  Matrix: Water Analysis Batch: 317610  Analyte Dissolved Organic Carbon  Lab Sample ID: 680-98737-2 MS  Matrix: Water	Result	Qualifier	Added 20,0  RI 1.0  Spike Added	Result Qualifier  20.8  MDL Unit mg/L  LCS LCS  Result Qualifier	mg/L Unit	Cli	D %Rec 104  Client S  Prepared  ent Sample  D %Rec 102	Prep Type:  %Rec. Limits 75 - 125  Gample ID: Meth Prep Type: D  Analyzed 02/26/14 17:27  PID: Lab Contro Prep Type: D  %Rec. Limits 80 - 120	od Błani issolve I Sampl issolve
Matrix: Water Analysis Batch: 317304  Analyte Sulfate  Method: 415.1 - DOC  Lab Sample ID: MB 680-317615/2-A Matrix: Water Analysis Batch: 317610  Analyte Dissolved Organic Carbon  Lab Sample ID: LCS 680-317615/1-A Matrix: Water Analysis Batch: 317610  Analyte Dissolved Organic Carbon  Lab Sample ID: 680-98737-2 MS Matrix: Water	Result	Qualifier	Added 20,0  RL 1.0  Spike Added 20.0	Result Qualifier  20.8  MDL Unit mg/L  LCS LCS  Result Qualifier	mg/L Unit	Cli	D %Rec 104  Client S  Prepared  ent Sample  D %Rec 102	Prep Type:  %Rec. Limits 75 - 125  cample ID: Meth Prep Type: D  Analyzed 02/26/14 17:27  Prep Type: D  %Rec. Limits 80 - 120	od Błani issolved I Sample issolved
Lab Sample ID: LCS 680-317304/7 Matrix: Water Analysis Batch: 317304  Analyte Sulfate  Method: 415.1 - DOC  Lab Sample ID: MB 680-317615/2-A Matrix: Water Analysis Batch: 317610  Analyte Dissolved Organic Carbon  Lab Sample ID: LCS 680-317615/1-/ Matrix: Water Analysis Batch: 317610  Analyte Dissolved Organic Carbon  Lab Sample ID: 680-98737-2 MS Matrix: Water Analysis Batch: 317610  Analyte Dissolved Organic Carbon  Lab Sample ID: 680-98737-2 MS Matrix: Water Analysis Batch: 317610  Analyte	Result	Qualifier	Added 20,0  RI 1.0  Spike Added	Result Qualifier 20.8  MDL Unit mg/L  LCS LCS Result Qualifier 20.4	mg/L Unit	Cli	D %Rec 104  Client S  Prepared  ent Sample  D %Rec 102	Prep Type:  %Rec. Limits 75 - 125  Gample ID: Meth Prep Type: D  Analyzed 02/26/14 17:27  Prep Type: D  %Rec. Limits 80 - 120  Prep Type: D	od Blankissolved  Dil Factorissolved  I Sample issolved

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98737-1

Client Sample ID: Method Blank

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

SDG: KPS114

Lab Sample	ID: 680-98737-2 MS	D					CI	ient	Sample	D: GWE-	3D-F(0.2	)-0214
Matrix: Wat	er									Prep Ty	pe: Diss	solved
Analysis Ba	itch: 317610											
		Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte		Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Dissolved Orga	inic Carbon	4.7		20.0	25.2		mg/L		103	80 - 120	1	20

#### Method: 415.1 - TOC

Matrix: Water

Lab Sample ID: MB 680-318039/26

Lab Sample ID: LCSD 680-318039/35

	Analysis Batch: 318039									
-		MB	MB							
	Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Section 2	Total Organic Carbon	1.0	Ü	1.0		mg/L	_		03/03/14 00:43	1

	Lab Sample ID: LCS 680-318039/34 Matrix: Water Analysis Batch: 318039							Client Sample ID: Lab Control Sample Prep Type: Total/NA				
-	Analysis Daton. 910005	Spike	LCS	LCS				%Rec.				
1	Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits				
	Total Organic Carbon	20.0	21.1		mg/L		105	80 - 120	PARTITION J. VINCENSIA L.			

	Matrix: Water							Prep T	ype: To	tal/NA
	Analysis Batch: 318039									
		Spike	LCSD	LCSD				%Rec.		RPD
1	Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
	Total Organic Carbon	20.0	20,7	-	mg/L	_	103	80 - 120	2	25

#### **QC Association Summary**

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98737-1

SDG: KPS114

Analysis Batch: 317263	3				
		D T	Madria	قامذا ما	Door Dodol
Lab Sample ID	Client Sample ID  GWE-3D-0214	Prep Type Total/NA	Matrix Water	Method 8260B	Prep Batch
680-98737-1		Total/NA	Water	8260B	
LCS 680-317263/4	Lab Control Sample	Total/NA		8260B	
LCSD 680-317263/5	Lab Control Sample Dup		Water		
MB 680-317263/9	Method Blank	Total/NA	Water	8260B	
Analysis Batch: 317588	;				
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-98737-3	LTM Trip Blank #9	Total/NA	Water	8260B	
LCS 680-317585/4	Lab Control Sample	Total/NA	Water	8260B	
LCSD 680-317585/5	Lab Control Sample Dup	Total/NA	Water	8260B	
MB 680-317585/8	Method Blank	Total/NA	Water	8260B	
GC VOA					
Analysis Batch: 317227	,				
Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batch
680-98737-1	GWE-3D-0214	Total/NA	Water	RSK-175	
LCS 680-317227/3	Lab Control Sample	Total/NA	Water	RSK-175	
LCS 680-317227/5	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 680-317227/4	Lab Control Sample Dup	Total/NA	Water	RSK-175	
LCSD 680-317227/6	Lab Control Sample Dup	Total/NA	Water	RSK-175	
MB 680-317227/8	Method Blank	Total/NA	Water	RSK-175	
	WOUND CHAIR	Totalina	V10,07	NON TO	
Metals					
Prep Batch: 316575					
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-98737-1	GWE-3D-0214	Total Recoverable	Water	3005A	
680-98737-2	GWE-3D-F(0.2)-0214	Dissolved	Water	3005A	
LCS 680-316575/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
MB 680-316575/1-A	Method Blank	Total Recoverable	Water	3005A	
Analysis Batch: 317292	Σ				
	Client Sample ID		Matrix	Method	
Lab Sample ID		Prep Type			Prep Batcl
Lab Sample ID 680-98737-1	GWE-3D-0214	Prep Type  Total Recoverable	Water	6010C	
hadden and the control of the contro	11/20/1419		Water Water	6010C 6010C	31657
680-98737-1	GWE-3D-0214	Total Recoverable			31657 31657
680-98737-1 680-98737-2	GWE-3D-0214 GWE-3D-F(0.2)-0214	Total Recoverable Dissolved	Water	6010C	Prep Batcl 316579 316579 316579 316579
680-98737-1 680-98737-2 LCS 680-316575/2-A MB 680-316575/1-A	GWE-3D-0214 GWE-3D-F(0.2)-0214 Lab Control Sample	Total Recoverable Dissolved Total Recoverable	Water Water	6010C 6010C	31657 31657 31657
680-98737-1 680-98737-2 LCS 680-316575/2-A MB 680-316575/1-A	GWE-3D-0214 GWE-3D-F(0.2)-0214 Lab Control Sample Method Blank	Total Recoverable Dissolved Total Recoverable	Water Water	6010C 6010C	31657 31657 31657
680-98737-1 680-98737-2 LCS 680-316575/2-A MB 680-316575/1-A	GWE-3D-0214 GWE-3D-F(0.2)-0214 Lab Control Sample Method Blank	Total Recoverable Dissolved Total Recoverable	Water Water	6010C 6010C	31657 31657 31657
680-98737-1 680-98737-2 LCS 680-316575/2-A MB 680-316575/1-A General Chemistry	GWE-3D-0214 GWE-3D-F(0.2)-0214 Lab Control Sample Method Blank	Total Recoverable Dissolved Total Recoverable Total Recoverable	Water Water Water	6010C 6010C 6010C	31657 31657 31657 31657
680-98737-1 680-98737-2 LCS 680-316575/2-A MB 680-316575/1-A General Chemistry Analysis Batch: 316308 Lab Sample ID	GWE-3D-0214 GWE-3D-F(0.2)-0214 Lab Control Sample Method Blank	Total Recoverable Dissolved Total Recoverable Total Recoverable Prep Type	Water Water Water	6010C 6010C 6010C Method	31657 31657 31657 31657
680-98737-1 680-98737-2 LCS 680-316575/2-A MB 680-316575/1-A General Chemistry Analysis Batch: 316308 Lab Sample ID 680-98737-1	GWE-3D-0214 GWE-3D-F(0.2)-0214 Lab Control Sample Method Blank  B Client Sample ID GWE-3D-0214	Total Recoverable Dissolved Total Recoverable Total Recoverable  Prep Type Total/NA	Water Water Water Matrix Water	6010C 6010C 6010C Method 353.2	31657 31657 31657 31657
680-98737-1 680-98737-2 LCS 680-316575/2-A MB 680-316575/1-A General Chemistry Analysis Batch: 316308 Lab Sample ID 680-98737-1 LCS 680-316308/14 MB 680-316308/13	GWE-3D-0214 GWE-3D-F(0.2)-0214 Lab Control Sample Method Blank  Client Sample ID GWE-3D-0214 Lab Control Sample Method Blank	Total Recoverable Dissolved Total Recoverable Total Recoverable  Prep Type Total/NA Total/NA	Water Water Water  Matrix Water Water	6010C 6010C 6010C Method 353.2 353.2	31657 31657 31657 31657
680-98737-1 680-98737-2 LCS 680-316575/2-A MB 680-316575/1-A General Chemistry Analysis Batch: 316308 Lab Sample ID 680-98737-1 LCS 680-316308/14	GWE-3D-0214 GWE-3D-F(0.2)-0214 Lab Control Sample Method Blank  Client Sample ID GWE-3D-0214 Lab Control Sample Method Blank	Total Recoverable Dissolved Total Recoverable Total Recoverable  Prep Type Total/NA Total/NA	Water Water Water  Matrix Water Water	6010C 6010C 6010C Method 353.2 353.2	31657 31657 31657 31657

#### **QC Association Summary**

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98737-1

SDG: KPS114

#### General Chemistry (Continued) Analysis Batch: 317049 (Continued) Method Prep Batch Lab Sample ID Client Sample ID Matrix Prep Type LCS 680-317049/6 Water 310.1 Lab Control Sample Total/NA LCSD 680-317049/32 Lab Control Sample Dup Total/NA Water 310.1 MB 680-317049/5 Method Blank Total/NA Water 310,1 Analysis Batch: 317298 Lab Sample ID Client Sample ID Prep Type Matrix Method Prep Batch 325.2 680-98737-1 GWE-3D-0214 Total/NA Water LCS 680-317298/18 Lab Control Sample Total/NA Water 325.2 Total/NA Water 325.2 MB 680-317298/26 Method Blank Analysis Batch: 317304 Lab Sample ID Client Sample ID Matrix Method Prep Batch Prep Type 680-98737-1 GWE-3D-0214 Total/NA Water 375.4 LCS 680-317304/7 Total/NA Water 375.4 Lab Control Sample MB 680-317304/8 375.4 Method Blank Total/NA Water Analysis Batch: 317610 Lab Sample ID Client Sample ID Method Prep Batch Prep Type Matrix 415.1 680-98737-2 GWE-3D-F(0.2)-0214 Dissolved Water 680-98737-2 MS GWE-3D-F(0.2)-0214 Dissolved Water 415.1 680-98737-2 MSD GWE-3D-F(0.2)-0214 Dissolved Water 415.1 Dissolved Water 415.1 317615 LCS 680-317615/1-A Lab Control Sample MB 680-317615/2-A Dissolved Water 415.1 317615 Method Blank Filtration Batch: 317615 Method Lab Sample ID Matrix Prep Batch Client Sample ID Prep Type LCS 680-317615/1-A Lab Control Sample Dissolved Water FILTRATION MB 680-317615/2-A Dissolved Water FILTRATION Method Blank Analysis Batch: 318039 Lab Sample ID Client Sample ID Matrix Method Prep Batch Prep Type 680-98737-1 GWE-3D-0214 Total/NA Water 415.1 LCS 680-318039/34 Lab Control Sample Total/NA Water 415 3 LCSD 680-318039/35 Lab Control Sample Dup Total/NA Water 415.1 MB 680-318039/26 Method Blank Total/NA Water 415.1

#### Lab Chronicle

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98737-1

SDG: KPS114

Client Sample ID: GWE-3D-0214

Date Collected: 02/18/14 12:25 Date Received: 02/19/14 09:36 Lab Sample ID: 680-98737-1

Matrix: Water

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		25	317263	02/26/14 15:25	MMT	TAL SAV
Total/NA	Analysis	RSK-175		1	317227	02/26/14 17:20	TAR	TAL SAV
Total Recoverable	Prep	3005A			316575	02/20/14 16:48	BJB	TAL SAV
Total Recoverable	Analysis	6010C		1	317292	02/25/14 18:26	BCB	TAL SAV
Total/NA	Analysis	353.2		1	316308	02/19/14 13:54	GRX	TAL SAV
Total/NA	Analysis	310.1		1	317049	02/24/14 17:12	LBH	TAL SAV
Total/NA	Analysis	325.2		10	317298	02/25/14 14:02	JME	TAL SAV
Total/NA	Analysis	375.4		10	317304	02/25/14 13:53	JME	TAL SAV
Total/NA	Analysis	415.1		1	318039	03/03/14 05:27	JER	TAL SAV

Client Sample ID: GWE-3D-F(0.2)-0214

Date Collected: 02/18/14 12:25

Date Received: 02/19/14 09:36

Lab Sample ID: 680-98737-2

Matrix: Water

Batch Batch Dilution Batch Prepared Prep Type Method Туре Run Factor Number or Analyzed Analyst Lab Dissolved Prep 3005A 316575 TAL SAV 02/20/14 16:48 ВЈВ Dissolved Analysis 6010C 1 317292 02/25/14 18:30 BCB TAL SAV Dissolved 415.1 Analysis 317610 02/26/14 17:58 CMP TAL SAV

Client Sample ID: LTM Trip Blank #9

Date Collected: 02/18/14 00:00

Date Received: 02/19/14 09:36

Matrix: Water

-		Batch	Batch		Dilution	Batch	Prepared			
-	Ргер Туре	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab	
	Total/NA	Analysis	8260B		1	317585	02/27/14 17:42	TF1	TAL SAV	-

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

# Page 22 of 24

#### Savannah

5102 LaRoche Avenue

## Chain of Custody Record



Savannah, GA 31404 phone 912.354.7858 fax 912.352.0165										•												TestAmerica Laboratories, Inc.
Client Contact	Project M	anager: Bol	b Dillmon			Site	Cont	note l	Mink		`a=ba	**		E S	e. 2	is in the	1-3	m.D	1	C. (**)		COC No:
URS Corporation	<del></del>	314) 743-41				·	Cont								rier:			7	72392 1	2.4.4		l of l COCs
1001 Highlands Plaza Drive West, Suite 300	12007.02. (		urnaround	Time		1 -			T	T	10,30	<del>'</del>	1	-	1701	┰-	4	4	Т	T T	$\vdash$	
St. Louis, MO 63110	Calendar		ork Days (W		_	1	3			-	-					1				$  \  $		21563600.00001
(314) 429-0100 Phone			from Below			1 6	<b>3</b>		325.2/Sulfate by 375.4									ĺ				
	┨ 👸		_	J. W. W.	HI CA	11.	3	*	by 3			١,								Ш		SDG No.
(314) 429-0462 FAX Project Name: 1Q14 Route 9 GW Sampling LTM			2 weeks				500		finte	1		Dissolved Pe/Min by 6010C										
Site: Solutia WG Krummrich Facility			week				Ì	_	NS/S	5		by 6										
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Sample Identification	Date	Time	Туре	Matrix	# of Cont	Tilte	Total Ke/Ma by 6010C	Ž	Chloride by 2	Methane by RSK 175	Nitrate by 353.2	Dissolved Fe/A	DOC by 415.1									Sample Specific Notes:
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LTM Trio Blank #9	2/ <b>8/</b> M			Wash	2	1 1	٦									١.						
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=N					1	<del></del>		1	1	2	3,1	3 4	2	<del>                                     </del>			$\top$	_	1			_
Possible Hazard Identification	202,000					s	Samp							ass	esse	d if s	amp	les	are r	etaii	ned	longer than 1 month)
Non-Hazard Fiammable Skin Irritant	Coison	В	THETOWN			- 1		Retu	um 7	o Cli	ent			Disp	osal	By La	3b			Arch	ive i	For Months
Special Instructions/QC Requirements & Comments:																						
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#### Login Sample Receipt Checklist

Client: Solutia Inc.

Job Number: 680-98737-1

SDG Number: KPS114

List Source: TestAmerica Savannah

Login Number: 98737 List Number: 1

Creator: Banda, Christy S

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>N/A</td> <td></td>	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	





#### **Certification Summary**

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98737-1

SDG: KPS114

#### Laboratory: TestAmerica Savannah

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
	AFCEE		SAVLAB	
A2LA	DoD ELAP		399.01	02-28-15
A2LA	ISO/IEC 17025		399.01	02-28-15
Alabama	State Program	4	41450	06-30-14
Arkansas DEQ	State Program	6	88-0692	01-31-15
California	NELAP	9	3217CA	07-31-14
Colorado	State Program	8	N/A	12-31-14
Connecticut	State Program	1	PH-0161	03-31-15
Florida	NELAP	4	E87052	06-30-14
GA Dept. of Agriculture	State Program	4	N/A	06-30-14
Georgia	State Program	4	N/A	06-30-14
Georgía	State Program	4	803	06-30-14
Guam	State Program	9	09-005r	04-17-14 *
Hawaii	State Program	9	N/A	06-30-14
Illinois	NELAP	5	200022	11-30-14
Indiana	State Program	5	N/A	06-30-14
lowa	State Program	7	353	07-01-15
Kentucky (DW)	State Program	4	90084	12-31-14
Kentucky (UST)	State Program	4	18	06-30-14
Louisiana	NELAP	6	LA100015	12-31-14
Maine	State Program	1	GA00006	08-16-14
Maryland	State Program	3	250	12-31-14
Massachusetts	State Program	1 `	M-GA006	06-30-14
Michigan	State Program	5	9925	06-30-14
Mississippi	State Program	4	N/A	06-30-14
Montana	State Program	8	CERT0081	01-01-15
Nebraska	State Program	7	TestAmerica-Savannah	06-30-14
New Jersey	NELAP	2	GA769	06-30-14
New Mexico	State Program	6	N/A	06-30-14
New York	NELAP	2	10842	03-31-14 *
North Carolina DENR	State Program	4	269	12-31-14
North Carolina DHHS	State Program	4	13701	07-31-14
Oklahoma	State Program	6	9984	08-31-14
Pennsylvania	NELAP	3	68-00474	06-30-14
Puerto Rico	State Program	2	GA00006	12-31-14
South Carolina	State Program	4	98001	06-30-14
Tennessee	State Program	4	TN02961	06-30-14
Texas	NELAP	6	T104704185-08-TX	11-30-14
USDA	Federal		SAV 3-04	04-07-14 *
Virginia	NELAP	3	460161	06-14-14
Washington	State Program	10	C1794	06-10-14
West Virginia DEP	State Program	3	94	06-30-14
West Virginia DHHR	State Program	3	9950C	12-31-14
Wisconsin	State Program	5	999819810	08-31-14
Wyoming	State Program	8	8TMS-L	06-30-14

<sup>\*</sup> Expired certification is currently pending renewal and is considered valid.

## Solutia Krummrich Data Review WGK LTM 1Q14

**Laboratory SDG: KPS115** 

Data Reviewer: Melissa Mansker Peer Reviewer: Elizabeth Kunkel

Date Reviewed: 3/14/2014

Guidance: USEPA National Functional Guidelines for Superfund Organic Methods Data Review 2008. USEPA National Functional Guidelines for Superfund

**Inorganic Data Review 2010** 

Work Plan: Revised Long-Term Monitoring Program (LTMP) Work Plan (Solutia

2009)

Sample Ide	entification
CPA-MW-4D-0214	CPA-MW-4D-F(0.2)-0214
1Q14 LTM Trip Blank #10	

#### 1.0 Data Package Completeness

Were all items delivered as specified in the QAPP and COC as appropriate? Yes

#### 2.0 Laboratory Case Narrative \ Cooler Receipt Form

Were problems noted in the laboratory case narrative or cooler receipt form?

Yes, the laboratory case narrative indicated sample CPA-MW-4D-0214 was diluted and re-analyzed to bring chlorobenzene within the calibration range of the instrument. Results for chlorobenzene were reported from the re-analysis diluted run and the remaining compounds were reported from the original analysis. Instrument calibration was outside evaluation criteria for nitrate in sample CPA-MW-4D-0214. These issues are addressed further in the appropriate sections below.

The cooler receipt form did not indicate any problems.

#### 3.0 Holding Times

Were samples extracted/analyzed within applicable limits?

Yes

#### 4.0 Blank Contamination

Were any analytes detected in the Method Blanks, Field Blanks or Trip Blanks?

No

#### 5.0 Laboratory Control Sample

Were LCS recoveries within evaluation criteria?

Yes

#### 6.0 Surrogate Recoveries

Were surrogate recoveries within evaluation criteria?

Yes

#### 7.0 Matrix Spike and Matrix Spike Duplicate Recoveries

Were MS/MSD samples collected as part of this SDG?

Yes, although not requested, sample CPA-MW-4D-0214 was spiked and analyzed for sulfate.

Were MS/MSD recoveries within evaluation criteria?

Yes

#### 8.0 Internal Standard (IS) Recoveries

Were internal standard area recoveries within evaluation criteria?

Yes

#### 9.0 Laboratory Duplicate Results

Were laboratory duplicate samples collected as part of this SDG?

Yes, sample CPA-MW-4D-0214 were duplicated and analyzed for alkalinity, free carbon dioxide, and nitrate.

Were laboratory duplicate sample RPDs within criteria?

Yes

#### 10.0 Field Duplicate Results

Were field duplicate samples collected as part of this SDG?

No

#### 10.0 Sample Dilutions

For samples that were diluted and nondetect, were undiluted results also reported?

Not applicable; analytes were detected in samples that were diluted.

#### 11.0 Additional Qualifications

Were additional qualifications applied?

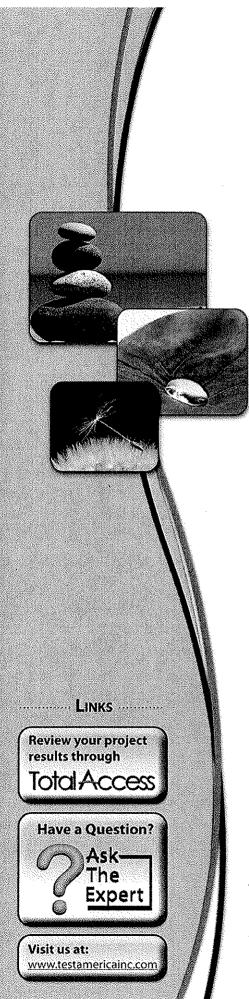
Yes, the following sample is qualified, as summarized below, due to instrument calibration outside evaluation criteria for nitrate.

Sample ID	Parameter	Analyte	Qualification
CPA-MW-4D-0214	General chemistry	Nitrate	UJ

## SDG KPS115

Results of Samples from Monitoring Well:

CPA-MW-4D



## **TestAmerica**

THE LEADER IN ENVIRONMENTAL TESTING

## **ANALYTICAL REPORT**

TestAmerica Laboratories, Inc. TestAmerica Savannah 5102 LaRoche Avenue Savannah, GA 31404 Tel: (912)354-7858

TestAmerica Job ID: 680-98831-1

TestAmerica Sample Delivery Group: KPS115

Client Project/Site: WGK Long Term Monitoring - 1Q14

For:

Solutia Inc.

575 Maryville Centre Dr. Saint Louis, Missouri 63141

Attn: Mr. Jerry Rinaldi

Michele KKISEY

Authorized for release by: 3/7/2014 3:32:24 PM

Michele Kersey, Project Manager I (912)354-7858 michele.kersey@testamericainc.com

Reviewed on MAR 1 4 2014

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

## 15

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#### **Case Narrative**

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98831-1

SDG: KPS115

Job ID: 680-98831-1

Laboratory: TestAmerica Savannah

Narrative

#### **CASE NARRATIVE**

Client: Solutia Inc.

Project: WGK Long Term Monitoring - 1Q14

Report Number: 680-98831-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In the event of interference or analytes present at high concentrations, samples may be diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

#### RECEIPT

The samples were received on 2/21/2014 9:26 AM; the samples arrived in good condition, property preserved and, where required, on ice. The temperature of the cooler at receipt was 2.4° C.

#### **VOLATILE ORGANIC COMPOUNDS (GC-MS)**

Samples CPA-MW-4D-0214 (680-98831-1) and 1Q14 LTM Trip Blank #10 (680-98831-3) were analyzed for Volatile Organic Compounds (GC-MS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 03/05/2014.

Sample CPA-MW-4D-0214 (680-98831-1)[2X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No difficulties were encountered during the volatiles analysis.

All quality control parameters were within the acceptance limits.

#### SEMIVOLATILE ORGANIC COMPOUNDS (AQUEOUS)

Sample CPA-MW-4D-0214 (680-98831-1) was analyzed for Semivolatile Organic Compounds (Aqueous) in accordance with EPA SW-846 Method 8270D. The samples were prepared on 02/24/2014 and analyzed on 03/03/2014.

No difficulties were encountered during the semivolatiles analysis.

All quality control parameters were within the acceptance limits.

#### **DISSOLVED GASES**

Sample CPA-MW-4D-0214 (680-98831-1) was analyzed for dissolved gases in accordance with RSK-175. The samples were analyzed on 02/25/2014.

No difficulties were encountered during the dissolved gases analysis.

All quality control parameters were within the acceptance limits.

#### METALS (ICP)

Sample CPA-MW-4D-F(0.2)-0214 (680-98831-2) was analyzed for Metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared on 02/21/2014 and analyzed on 02/24/2014.

No difficulties were encountered during the metals analysis.

All quality control parameters were within the acceptance limits.

MAR 1 4 2014

#### **Case Narrative**

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98831-1

SDG: KPS115

#### Job ID: 680-98831-1 (Continued)

Laboratory: TestAmerica Savannah (Continued)

#### METALS (ICP)

Sample CPA-MW-4D-0214 (680-98831-1) was analyzed for Metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared on 02/21/2014 and analyzed on 02/24/2014.

No difficulties were encountered during the metals analysis.

All quality control parameters were within the acceptance limits.

#### **ALKALINITY**

Sample CPA-MW-4D-0214 (680-98831-1) was analyzed for alkalinity in accordance with EPA Method 310.1. The samples were analyzed on 02/25/2014.

No difficulties were encountered during the alkalinity analysis.

All quality control parameters were within the acceptance limits.

#### CHLORIDE

Sample CPA-MW-4D-0214 (680-98831-1) was analyzed for Chloride in accordance with EPA Method 325.2. The samples were analyzed on 02/25/2014.

Sample CPA-MW-4D-0214 (680-98831-1)[5X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No difficulties were encountered during the chloride analysis.

All quality control parameters were within the acceptance limits.

#### **NITRATE-NITRITE AS NITROGEN**

Sample CPA-MW-4D-0214 (680-98831-1) was analyzed for nitrate-nitrite as nitrogen in accordance with EPA Method 353.2. The samples were analyzed on 02/21/2014.

The nitrate result is obtained from a calculation incorporating the nitrite and nitrate + nitrite results. Re-analysis is not performed if QC for the calculated analyte does not meet acceptance criteria, provided the QC results for the component analytes are acceptable. Data have been qualified to denote this situation.

No difficulties were encountered during the nitrate-nitrite analysis.

All quality control parameters were within the acceptance limits.

#### SULFATE

Sample CPA-MW-4D-0214 (680-98831-1) was analyzed for sulfate in accordance with EPA Method 375.4. The samples were analyzed on 02/25/2014.

Sample CPA-MW-4D-0214 (680-98831-1)[10X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No difficulties were encountered during the sulfate analysis.

All quality control parameters were within the acceptance limits.

#### TOTAL ORGANIC CARBON

Sample CPA-MW-4D-0214 (680-98831-1) was analyzed for total organic carbon in accordance with EPA Method 415.1. The samples were analyzed on 03/03/2014.

No difficulties were encountered during the TOC analysis.

MAR 1 4 2014

#### **Case Narrative**

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98831-1

SDG: KPS115

Job ID: 680-98831-1 (Continued)

Laboratory: TestAmerica Savannah (Continued)

All quality control parameters were within the acceptance limits.

#### DISSOLVED ORGANIC CARBON (DOC)

Sample CPA-MW-4D-F(0.2)-0214 (680-98831-2) was analyzed for Dissolved Organic Carbon (DOC) in accordance with EPA Method 415.1. The samples were analyzed on 02/26/2014.

No difficulties were encountered during the DOC analysis.

All quality control parameters were within the acceptance limits.

## Sample Summary

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98831-1

SDG: KPS115

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-98831-1	CPA-MW-4D-0214	Water	02/20/14 12:30	02/21/14 09:26
680-98831-2	CPA-MW-4D-F(0.2)-0214	Water	02/20/14 12:30	02/21/14 09:26
680-98831-3	1Q14 LTM Trip Blank #10	Water	02/20/14 12:30	02/21/14 09:26



#### **Method Summary**

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98831-1

SDG: KPS115

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL SAV
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	TAL SAV
RSK-175	Dissolved Gases (GC)	RSK	TAL SAV
6010C	Metals (ICP)	SW846	TAL, SAV
310.1	Alkalinity	MCAVW	TAL SAV
325.2	Chloride	MCAWW	TAL SAV
353.2	Nitrogen, Nitrate-Nitrite	MCAWW	TAL SAV
375.4	Sulfate	MCAVW	TAL SAV
415.1	TOC	MCAWW	TAL SAV
415.1	DOC	MCAWW	TAL SAV

#### Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

RSK = Sample Prep And Calculations For Dissolved Gas Analysis In Water Samples Using A GC Headspace Equilibration Technique, RSKSOP-175, Rev. 0, 8/11/94, USEPA Research Lab

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And its Updates.

#### Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

#### **Definitions/Glossary**

Client: Solutia Inc. TestAmerica Job ID: 680-98831-1 Project/Site: WGK Long Term Monitoring - 1Q14 SDG: KPS115 Qualifiers GC/MS VOA Qualifier Qualifier Description Ű Indicates the analyte was analyzed for but not detected. Е Result exceeded calibration range. D Surrogate or matrix spike recoveries were not obtained because the extract was diluted for analysis; also compounds analyzed at a dilution may be flagged with a D. GC/MS Semi VOA Qualifier Qualifier Description ũ Indicates the analyte was analyzed for but not detected. GC VOA Qualifier Qualifier Description Indicates the analyte was analyzed for but not detected. Metals Qualifier Qualifier Description ΰ Indicates the analyte was analyzed for but not detected. **General Chemistry** Qualifier Qualifier Description ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC exceeds the control limits U Indicates the analyte was analyzed for but not detected. Glossary Abbreviation These commonly used abbreviations may or may not be present in this report. Listed under the "D" column to designate that the result is reported on a dry weight basis %R Percent Recovery CNE Contains no Free Liquid DER Duplicate error ratio (normalized absolute difference) Dil Fac Dilution Factor DL, RA, RE, IN Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample DLC Decision level concentration MDA Minimum detectable activity **EDL** Estimated Detection Limit MDC Minimum detectable concentration MDL Method Detection Limit ML Minimum Level (Dioxin) NC Not Calculated

MAR 1 4 2014

ND

PQL

OC

RER

RL

RPD

TEF

TEQ

Not detected at the reporting limit (or MDL or EDL if shown)

Relative Percent Difference, a measure of the relative difference between two points

Reporting Limit or Requested Limit (Radiochemistry)

Practical Quantitation Limit

Toxicity Equivalent Factor (Dioxin)

Toxicity Equivalent Quotient (Dioxin)

Quality Control

Relative error ratio

#### **Detection Summary**

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98831-1

SDG: KPS115

#### Client Sample ID: CPA-MW-4D-0214

Lab Sample ID:	: 680-98831-1
----------------	---------------

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	Đ	Method	Prep Type
Benzene	23		1.0	·	ug/L	1		8260B	Total/NA
Chlorobenzene	220		4.0	***************************************	-ug/L		outerstands	-8260B	Total/NA
1,2-Dichlorobenzene	1.7		1.0		ug/L	1		8260B	Total/NA
1,4-Dichlorobenzene	3.2		1.0		ug/L	1		8260B	Total/NA
Benzene - DL	32	D	2.0		ug/L	2		8260B	Total/NA
Chlorobenzene - DL	270	D	2.0		ug/L	2	QUICKA,	8260B	Total/NA
1,4-Dichlorobenzene - DL	4.2	D	2.0	ON THE PROPERTY OF THE PROPERT	ug/L	2	Accessive A	8260B	Total/NA
4-Chloroaniline	150		21		ug/L	1		8270D	Total/NA
Ethane	12		1.1		ug/L	1		RSK-175	Total/NA
Methane (TCD)	13000		390		ug/L	1		RSK-175	Total/NA
Iron	12		0.050		mg/L	1		6010C	Total
									Recoverable
Manganese	0.34		0.010		mg/L	1		6010C	Total
							-		Recoverable
Chloride	170		5.0		mg/L	5		325.2	Total/NA
Total Organic Carbon	7.9		1.0		mg/L	1		415.1	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Alkalinity	600	ALTERNATION AND ADDRESS OF THE PARTY OF THE	5.0		mg/L	1		310.1	Total/NA
Carbon Dioxide, Free	29		5,0		mg/L	1		310.1	Total/NA

#### Client Sample ID: CPA-MW-4D-F(0.2)-0214

#### Lab Sample ID: 680-98831-2

	Analyte Iron, Dissolved	Result	Qualifier	RL 0.050	 Unit mg/L	Dil Fac	D 	Method 6010C	Prep Type Dissolved
	Manganese, Dissolved	0.33		0.010	mg/L	1		6010C	Dissolved
-	Dissolved Organic Carbon	8.9		1.0	mg/L	1		415.1	Dissolved

#### Client Sample ID: 1Q14 LTM Trip Blank #10

Lab Sample ID: 680-98831-3

No Detections.

MAR 1 4 2014

This Detection Summary does not include radiochemical test results.

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98831-1

SDG: KPS115

Client Sample ID: CPA-MW-4D-0214 Lab Sample ID: 680-98831-1 Date Collected: 02/20/14 12:30

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	23	Landa de la constanta de la co	1.0		ug/L			03/05/14 08:25	1
Chlerobenzene	220-	- <del>-</del>			-11g/lz			<del></del>	
1,2-Dichlorobenzene	1.7		1.0		ug/L			03/05/14 08:25	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			03/05/14 08:25	1
1,4-Dichlorobenzene	3.2		1.0		ug/L			03/05/14 08:25	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	. 91		70 - 130					03/05/14 08:25	1
Dibromofluoromethane	103		70 - 130					03/05/14 08:25	1
Toluene-d8 (Surr)	92		70 - 130					03/05/14 08:25	1

rest results only. All other date was reported fi Method: 8260B - Volatile Organic Compounds (GC/MS) - DL trom the 1x dilution analysis

Ciletit Sample ID. CFA-Wit	14-4D-0214					Lab Can	ipic ib. 000-5	3031-1
Date Collected: 02/20/14 12:30							Matrix	c: Water
ate Received: 02/21/14 09:26			ſ					
Do not use this do Method: 8260B - Volatile Orgi	Ja USe all anic Compounds	other de (GC/MS)	da	~ ~				
Analyte		Qualifier	RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
Benzene	23	kaaaa ka ka ka ka ka ka ka ka ka ka ka k	1.0	ug/L			03/05/14 08:25	1
Chlerobenzene	220	-E	40	49/2			<del> 03/05/14 08:25</del>	1
1,2-Dichlorobenzene	1.7		1.0	ug/L			03/05/14 08:25	1
1,3-Dichlorobenzene	1.0	U	1.0	ug/L			03/05/14 08:25	1
1,4-Dichlorobenzene	3.2		1.0	ug/L			03/05/14 08:25	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	91		70 - 130		-		03/05/14 08:25	
Dibromofluoromethane	103		70 - 130				03/05/14 08:25	1
Toluene-d8 (Surr)	92		70 - 130				03/05/14 08:25	1
esc resulfs only. All other Method: 8260B - Volatile Orga	r data was	reported (GC/MS) - D	from the	lx dilution a	nalysis.			
Analyte	Result	Qualifier	RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
Benzene	32	D	2.0	ug/L			03/05/14 15:44	2
Chlorobenzene	270	D	2.0	ug/L			03/05/14 15:44	2
1,2-Dichlorobenzene	2.0	Ü	2.0	ug/L	- San Company		03/05/14 15:44	2
1,3-Dichlorobenzene	2.0	U	2.0	ug/L			03/05/14 15:44	2
1,4-Dichlorobenzene	4.2	D	2.0	ug/L			03/05/14 15:44	2
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	96		70 - 130		-		03/05/14 15:44	2
Dibromoflyoromethane	01		70 130				03/05/14 15:44	2

Surrogate 4-Bromofluorobenzene	%Recovery	Qualifier	Limits 70 - 130	Prepared Analyzed 03/05/14 15:44	Dil Fac
Dibromofluoromethane	90		70 - 130	03/05/14 15:44	2
Toluene-d8 (Surr)	94		70 - 130	03/05/14 15:44	2

Method: 8270D - Semivolati	le Organic Compou	ınds (GC/M	S)						
Analyte	Result	Qualifier	RL	MDL	Ųnit	D	Prepared	Analyzed	Dil Fac
4-Chloroaniline	150		21		ug/L		02/24/14 15:35	03/03/14 17:15	1
2-Chlorophenol	10	บ	10		ug/L		02/24/14 15:35	03/03/14 17:15	1
1,2,4-Trichlorobenzene	10	U	10		ug/L		02/24/14 15:35	03/03/14 17:15	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	60		38 - 130				02/24/14 15:35	03/03/14 17:15	1
2-Fluomohenol	88		25 130				02/24/14 15:35	03/03/14 17:15	1

2-Fluorophenol	68	25.130	02/24/14 15:35	03/03/14 17:15	1
Nitrobenzene-d5	79	39 - 130	02/24/14 15:35	03/03/14 17:15	1
Phenol-d5	71	25 130	02/24/14 15:35	03/03/14 17:15	1
Terphenyl-d14	90	10 - 143	02/24/14 15:35	03/03/14 17:15	1
2,4,6-Tribromophenol	104	31 - 141	02/24/14 15:35	03/03/14 17:15	1
i					

	Method: RSK-175 - Dissolved Gase	s (GC)								
	Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Ethane	12	V	1.1		ug/L			02/25/14 15:38	1
i	Ethylene	1.0	U	1.0		ug/L			02/25/14 15:38	1
	Methane (TCD)	13000		390		ug/L			02/25/14 15:38	1

1	-									
i	Method: 6010C - Metals (ICP) - Tot	al Recoverab	le							
	Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Iron	12		0.050		mg/L		02/21/14 15:49	02/24/14 14:54	1
	Manganese	0.34		0.010		mg/L		02/21/14 15:49	02/24/14 14:54	1
-	• • •									

TestAmerica Savannah

MAR 1 4 2014

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98831-1

SDG: KPS115

Client Sample ID: CPA-MW-4D-0214

Date Collected: 02/20/14 12:30 Date Received: 02/21/14 09:26 Lab Sample ID: 680-98831-1

Matrix: Water

General Chemistry  Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	170	***************************************	5.0		mg/L	 		02/25/14 12:42	5
Nitrate as N	0.050	U^ W	0.050		mg/L			02/21/14 17:25	1
Sulfate	50		50		mg/L			02/25/14 14:18	10
Total Organic Carbon	7.9		1.0		mg/L			03/03/14 05:41	1
Analyte	Result	Qualifier	RŁ	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	600	E-707 F-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1	5.0		mg/L	 		02/25/14 16:25	1
Carbon Dioxide, Free	29		5.0		mg/L			02/25/14 16:25	1

8

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98831-1

SDG: KPS115

Client Sample ID: CPA-MW-4D-F(0.2)-0214

Date Collected: 02/20/14 12:30 Date Received: 02/21/14 09:26 Lab Sample ID: 680-98831-2

Matrix: Water

Method: 6010C - Metals (ICP) - D	issolved								
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
łron, Dissolved	12		0.050		mg/L		02/21/14 15:49	02/24/14 14:59	1
Manganese, Dissolved	0.33		0.010		mg/L		02/21/14 15:49	02/24/14 14:59	1
General Chemistry - Dissolved									
Analyte	Result	Qualifier	RL	MDL	Unit	Đ	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	8.9		1.0		mg/L		***************************************	02/26/14 21:01	1

MAR 1 4 2014

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98831-1

SDG: KPS115

Client Sample ID: 1Q14 LTM Trip Blank #10

Date Collected: 02/20/14 12:30 Date Received: 02/21/14 09:26 Lab Sample ID: 680-98831-3

Matrix: Water

Method: 8260B - Volatile Organic (	Compounds (	GC/MS)							
Analyte	Result	Qualifier	RL.	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	Ü	1.0		ug/L			03/05/14 01:27	1
Chiorobenzene	1.0	U	1.0		ug/L			03/05/14 01:27	1
1,2-Dichtorobenzene	1.0	U	1.0		ug/L			03/05/14 01:27	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			03/05/14 01:27	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			03/05/14 01:27	1
0	0/0	A 1:4:	1:-:-				Dronamd	Analyzad	Dil Eso

Surrogate	%Recovery	Qualifier	Limits	Prepared Analyzed	Dil Fac
4-Bromofluorobenzene	86		70 - 130	03/05/14 01:27	1
Dibromofluoromethane	104		70 - 130	03/05/14 01:27	1
Toluene-d8 (Surr)	90		70 - 130	03/05/14 01:27	1

MAR 1 4 2014 MM

#### **Surrogate Summary**

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98831-1

SDG: KPS115

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water Prep Type: Total/NA

Lab Sample ID         Client Sample IO         (70-130)         (70-130)         (70-130)           680-98831-1         CPA-MW-4D-0214         91         103         92
680-98831-1 CPA-MW-4D-0214 91 103 92
680-98831-1 - DL CPA-MW-4D-0214 96 91 94
680-98831-3 1Q14 LTM Trip Blank #10 86 104 90
LCS 680-318232/4 Lab Control Sample 94 96 94
LCS 680-318233/4 Lab Control Sample 89 97 93
LCS 680-318241/4 Lab Control Sample 97 97 99
LCSD 680-318232/5 Lab Control Sample Dup 95 97 94
LCSD 680-318233/5 Lab Control Sample Dup 92 102 96
LCSD 680-318241/5 Lab Control Sample Dup 95 93 93
MB 680-318232/8 Method Blank 93 102 93
MB 680-318233/8 Method Blank 90 112 95
MB 680-318241/8 Method Blank 91 104 93

BFB = 4-Bromofluorobenzene

DBFM = Dibromofluoromethane

TOL ≈ Toluene-d8 (Surr)

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Water Prep Type: Total/NA

				Percent Sur	rogate Reco	very (Accept	ance Limits)
		FBP	2FP	NBZ	PHL	TPH	TBP
Lab Sample ID	Client Sample ID	(38-130)	(25-130)	(39-130)	(25-130)	(10-143)	(31-141)
680-98831-1	CPA-MW-4D-0214	60	68	79	71	90	104
LCS 680-316953/6-A	Lab Control Sample	71	63	67	63	77	75
LCSD 680-316953/7-A	Łab Control Sample Dup	79	73	79	72	87	87
MB 680-316953/5-A	Method Blank	70	68	73	73	88	70

Surrogate Legend

FBP = 2-Fluorobiphenyl

2FP ≈ 2-Fluorophenoì

NBZ = Nitrobenzene-d5

PHL = Phenol-d5

TPH = Terphenyl-d14

TBP = 2,4,6-Tribromophenol

MAR 1 4 2014 MM

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98831-1

SDG: KPS115

#### Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 680-318232/8 Client Sample ID: Method Blank

Matrix: Water Prep Type: Total/NA

Analysis Batch: 318232

		MD.	MID							
	Analyte	Result	Qualifier	RI.	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Benzene	1.0	U	1.0		ug/L			03/04/14 23:58	1
	Chlorobenzene	1.0	U	1.0		ug/L			03/04/14 23:58	1
-	1,2-Dichtorobenzene	1.0	U	1.0		นg/L			03/04/14 23:58	1
	1,3-Dichlorobenzene	1.0	ប	1.0		ug/L			03/04/14 23:58	1
	1,4-Dichlorobenzene	1.0	U	1.0		ug/L			03/04/14 23:58	1
		MB	MB							

-		MB	MB					50
	Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac	2222
10000	4-Bromofluorobenzene	93		70 - 130		03/04/14 23:58	1	Segge
	Dibromofluoromethane	102		70 - 130		03/04/14 23:58	1	22458
	Toluene-d8 (Surr)	93		70 - 130		03/04/14 23:58	1	3

Lab Sample ID: LCS 680-318232/4 Client Sample ID: Lab Control Sample Matrix: Water Prep Type: Total/NA

Analysis Batch: 318232

•	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	50.0	48.4	L4	ug/L	_	97	74 - 123	
Chiorobenzene	50.0	50.0		ug/L		100	79 - 120	
1,2-Dichtorobenzene	50.0	48.5		ug/L		97	77 - 124	
1,3-Dichlorobenzene	50.0	51.3		ug/L		103	79 - 123	
1,4-Dichlorobenzene	50.0	49.9		ug/L		100	76 - 124	

-		LCS	LCS	
****	Surrogate	%Recovery	Qualifier	Limits
	4-Bromofluorobenzene	94		70 - 130
	Dibromofluoromethane	96		70 - 130
ì	Toluene-d8 (Surr)	Q4		70 130

Lab Sample ID: LCSD 680-318232/5 Client Sample ID: Lab Control Sample Dup

Matrix: Water Prep Type: Total/NA

Analysis Batch: 318232

	Spike	LCSD	LCSD			%Rec.		RPD
Analyte	Added	Result	Qualifier Unit	Đ	%Rec	Limits	RPD	Limit
Benzene	50.0	48.7	ug/L		97	74 - 123	1	30
Chlorobenzene	50.0	50.7	ug/L		101	79 - 120	1	30
1,2-Dichforobenzene	50.0	49.6	ug/L		99	77 - 124	2	30
1,3-Dichlorobenzene	50.0	51.7	ug/L		103	79 - 123	1	30
1,4-Dichlorobenzene	50.0	50.3	ug/L		101	76 - 124	1	30

		LCSD	LCSD	
	Surrogate	%Recovery	Qualifier	Limits
-	4-Bromofluorobenzene	95		70 - 130
	Dibromofluoromethane	97		70 - 130
	Toluene-d8 (Surr)	94		70 - 130

MAR 1 4 2014 MM

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98831-1

SDG: KPS115

#### Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 680-318233/8

Matrix: Water

Analysis Batch: 318233

Client	Sample	ID:	Meth	od	Blank
	Dr	nn 1	`.nn.	Ta	fal/MA

•	MB	MB							
Analyte	Result	Qualifier	RL	MOL	Unit	D	Prepared	Analyzed	Oil Fac
Benzene	1.0	Ū .	1.0		ug/L			03/05/14 00:15	1
Chlorobenzene	1.0	U	1.0		ug/L			03/05/14 00:15	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			03/05/14 00:15	1
1,3-Dichtorobenzene	1,0	U	1.0		ug/L			03/05/14 00:15	1
1,4-Dichtorobenzene	1.0	U	1.0		ug/L			03/05/14 D0:15	1

мв мв Surrogate %Recovery Qualifier Limits Prepared Analyzed Dil Fac 70 - 130 03/05/14 00:15 4-Bromofluorobenzene 90 03/05/14 00:15 Dibromofluoromethane 112 70 - 130 03/05/14 00:15 Toluene-d8 (Surr) 95 70 - 130

Lab Sample ID: LCS 680-318233/4 Client Sample ID: Lab Control Sample Matrix: Water Prep Type: Total/NA

Analysis Batch: 318233

:	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	50.0	47,8		ug/L		96	74 - 123	
Chlorobenzene	50.0	48.6		ug/L		97	79 - 120	
1,2-Dichlorobenzene	50.0	48.7		ug/L		97	77 - 124	
1,3-Dichlorobenzene	50.0	49.6		ug/L		99	79 - 123	
1,4-Dichtorobenzene	50.0	48.7		ug/L		97	76 - 124	

LCS LCS Surrogate %Recovery Qualifier Limits 4-Bromofluorobenzene 89 70 - 130 Dibromofluoromethane 70 - 130 97 Toluene-d8 (Surr) 70 - 130 93

Lab Sample ID: LCSD 680-318233/5

Matrix: Water

Analysis Batch: 318233

Client Sample ID: Lab	Control Sample Dup
	Prep Type: Total/NA

	Spike	LCSD	LCSD			%Rec.		RPD
Analyte	Added	Result	Qualifier Unit	D	%Rec	Limits	RPD	Limit
Benzene	50.0	48.6	ug/L		97	74 - 123	2	30
Chlorobenzene	50.0	49.3	ug/L		99	79 - 120	1	30
1,2-Dichlorobenzene	50.0	48.8	ug/L		98	77 - 124	0	30
1,3-Dichlorobenzene	50.0	50.3	ug/L		101	79 - 123	1	30
1,4-Dichlorobenzene	50.0	49.5	ug/L		99	76 - 124	2	30

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene	92		70 - 130
Dibromofluoromethane	102		70 - 130
Toluene-d8 (Surr)	96		70 - 130

TestAmerica Savannah

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98831-1

03/05/14 12:22

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

SDG: KPS115

#### Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

93

Client Sample ID: Method Blank Lab Sample ID: MB 680-318241/8

Matrix: Water Prep Type: Total/NA

Analysis Batch: 318241

WR	WR							
Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dit Fac
1.0	U	1.0	,	ug/L			03/05/14 12:22	1
1.0	U	1.0		ug/L			03/05/14 12:22	1
1.0	U	1.0		ug/L			03/05/14 12:22	1
1.0	U	1.0		ug/L			03/05/14 12:22	1
1.0	U	1.0		ug/L			03/05/14 12:22	1
MB	MB							
%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
91		70 - 130			-		03/05/14 12:22	1
104		70 - 130					03/05/14 12:22	1
	Result 1.0 1.0 1.0 1.0 1.0 1.0 1.0 96 MB %Recovery		Result Qualifier   RL	Result Qualifier   RL   MDL	Result Qualifier   RL   MDL Unit   Unit	Result   Qualifier   RL   MDL   Unit   D	Result Qualifier   RL   MDL Unit   D   Prepared	Result Qualifier         RL         MDL Unit         D         Prepared         Analyzed           1.0 U         1.0 U         1.0 U         03/05/14 12:22           1.0 U         1.0 U         1.0 U         03/05/14 12:22           1.0 U         1.0 U         03/05/14 12:22           1.0 U         1.0 U         03/05/14 12:22           1.0 U         1.0 U         03/05/14 12:22           MB MB         WRecovery Qualifier         Limits         Prepared         Analyzed           91         70 - 130         03/05/14 12:22

Client Sample ID: Lab Control Sample Lab Sample ID: LCS 680-318241/4 Prep Type: Total/NA

70 - 130

Matrix: Water

Toluene-d8 (Surr)

Analysis Batch: 318241

	ration battern viozati							
-		Spike	LCS	LCS			%Rec.	
	Analyte	Added	Result	Qualifier Unit	D D	%Rec	Limits	
-	Benzene	50.0	52.1	ug/L	-	104	74 - 123	Process Property Process Communication
-	Chlorobenzene	50.0	51.2	ug/L		102	79 - 120	
-	1,2-Dichlorobenzene	50.0	. 50.4	ug/L		101	77 - 124	•
-	1,3-Dichlorobenzene	50.0	52.6	ug/L		105	79 - 123	
-	1,4-Dichlorobenzene	50.0	51.7	ug/L		103	76 - 124	

LCS LCS Surrogate %Recovery Qualifier Limits 4-Bromofluorobenzene 97 70 - 130 70 - 130 Dibromofluoromethane 97 70 - 130 Toluene-d8 (Surr) 99

Lab Sample ID: LCSD 680-318241/5

Matrix: Water

Analysis Batch: 318241

	Spike	LCSD	LCSD			%Rec.		RPD
lyte	Added	Result	Qualifier Unit	D	%Rec	Limits	RPD	Limit
zenê	50.0	49.1	ug/L		98	74 - 123	6	30
probenzene	50.0	50.7	ug/L		101	79 - 120	1	30
Dichlorobenzene	50.0	50,5	ug/L		101	77 - 124	0	30
Dichlorobenzene	50.0	51.9	ug/L		104	79 - 123	1	30
Dichlorobenzene	50.0	50,9	ug/L		102	76 - 124	2	30

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene	95	,,	70 - 130
Dibromofluoromethane	93		70 - 130
Toluene-d8 (Surт)	93		70 - 130

MAR 1 4 2014

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98831-1

SDG: KPS115

#### Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 680-316953/5-A

Matrix: Water

Analysis Batch: 317351

Client Sample ID	: Method Blank
	T T . ( . 1/4.1 4

Prep Type: Total/NA

Prep Batch: 316953

i	Analyte	Result	Qualifier	KL	MOL	UNIX	U	Prepared	Analyzeu	Di Fac	
	4-Chioroaniline	20	U	20		ug/L		02/24/14 15:35	02/26/14 14:24	1	
1	2-Chlorophenol	10	U	10		ug/L		02/24/14 15:35	02/26/14 14:24	1	
1	1,2,4-Trichlorobenzene	10	U	10		ug/L		02/24/14 15:35	02/26/14 14:24	1	
		MB	MB								
	Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac	

Surrogate	%Recovery	Qualifier Lim	its	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	70	38 -	130	02/24/14 15:35	02/26/14 14:24	1
2-Fluorophenol	68	25 -	130	02/24/14 15;35	02/26/14 14:24	1
Nitrobenzene-d5	73	39 -	130	02/24/14 15:35	02/26/14 14:24	1
Phenol-d5	73	25 -	130	02/24/14 15:35	02/26/14 14:24	1
Terphenyl-d14	88	10 -	143	02/24/14 15:35	02/26/14 14:24	1
2,4,6-Tribromophenol	70	31 -	141	02/24/14 15:35	02/26/14 14:24	1
i						

Lab Sample ID: LCS 680-316953/6-A

мв мв

Matrix: Water

Analysis Batch: 317351

Client Sample ID: Lab Control Sample Prep Type: Total/NA

Prep Batch: 316953

•		Spike	LC\$	LCS			%Rec.		
Analyte		Added	Result	Qualifier	Unit	D %Rec	Limits		
4-Chloroaniline		100	54.9		ug/L	 55	42 - 130	***************************************	
2-Chlorophenol	* *	100	69.5		ug/L	70	57 - 130		•
1,4-Dioxane		100	57.7		ug/L	58	35 - 130		
1,2,4-Trichlorobenzene		100	49.6		ug/L	50	42 - 130		

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
2-Fluorobiphenyl	71		38 - 130
2-Fluorophenol	63		25 - 130
Nitrobenzene-d5	67		39 _ 130
Phenol-d5	63		25 - 130
Terphenyl-d14	77		10 - 143
2,4,6-Tribromophenol	75		31 - 141

Lab Sample ID: LCSD 680-316953/7-A

Matrix: Water

Analysis Batch: 317351

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 316953

	Spike	LC\$D	LCSD			%Rec.		RPD
Analyte	Added	Result	Qualifier	Unit	D %Rec	Limits	RPD	Limit
4-Chloroariline	100	56.5		ug/L	56	42 - 130	3	50
2-Chlorophenol	100	81.4		ug/L	81	57 - 130	16	50
1,4-Dioxane	100	64.1		ug/L	64	35 - 130	10	50
1,2,4-Trichlorobenzene	100	59,1		ug/L	59	42 - 130	18	50

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
2-Fluorobiphenyl	79		38 - 130
2-Fluorophenol	73		25 - 130
Nitrobenzene-d5	79		39 - 130
Phenol-d5	72		25 - 130
Terphenyi-d14	87		10 - 143
2,4,6-Tribromophenol	87		31 - 141

MAR 1 4 2014

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98831-1

SDG: KPS115

#### Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 680-317026/8

Matrix: Water

Client Sample ID: Method Blank
Prep Type: Total/NA

Analysis Batch: 317026

	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	1.1	U	1.1	,—	ug/L	 		02/25/14 11:41	1
Ethylene	1.0	U	1.0		ug/L			02/25/14 11:41	1
Methane	0.58	U	0.58		ug/L			02/25/14 11:41	1
Methane (TCD)	390	U	390		ug/L			02/25/14 11:41	1

Lab Sample ID: LCS 680-317026/4 Client Sample ID: Lab Control Sample

Matrix: Water Prep Type: Total/NA

Analysis Batch: 317026

-	•	Spike	LCS	LCS				%Rec.	
1	Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
4100000	Ethane	288	264	HAPPEN STATE OF THE STATE OF TH	ug/L	•==	91	75 - 125	 
100000000000000000000000000000000000000	Ethylene	269	254		ug/L		94	75 - 125	
-	Methane	154	131		ug/L		85	75 - 125	

Lab Sample ID: LCS 680-317026/5

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 317026

 Spike
 LCS LCS
 %Rec.

 Analyte
 Added
 Result Qualifier Unit D %Rec Limits

 Methane (TCD)
 1920
 1480
 ug/L
 77
 75 - 125

 Spike
 LCSD
 LCSD
 %Rec.
 RPD

 Analyte
 Added
 Result
 Qualifier
 Unit
 D %Rec
 Limits
 RPD
 Limit

 Methane (TCD)
 1920
 1870
 ug/L
 97
 75 - 125
 24
 30

Lab Sample ID: LCSD 680-317026/7

Matrix: Water

Analysis Batch: 317026

Spike LCSD LCSD

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

RPD

Analyte Added Result Qualifier Unit %Rec Limits RPD Limit Ethane 288 275 ug/L 95 75 - 125 4 30 97 75 - 125 2 Ethylene 269 260 ug/L 30 75 - 125 30 Methane 154 137 ug/L 89

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 680-316760/1-A

Matrix: Water

Analysis Batch: 317041

MB MB

MB MB

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 316760

Analyte Result Qualifier RL MDL Unit Prepared Analyzed Dil Fac Iron 0.050 U 0.050 mg/L 02/21/14 15:49 02/24/34 13:11 Iron, Dissolved 0.050 U 0.050 mg/L 02/21/14 15:49 02/24/14 13:11 Manganese 0.010 U 0.010 mg/L 02/21/14 15:49 02/24/14 13:11 0.010 U 0.010 02/21/14 15:49 02/24/14 13:11 Manganese, Dissolved ma/L

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98831-1

SDG: KPS115

Method: 6010C - Metals (ICP) (Continued)

Client Sample ID: Lab Control Sample Lab Sample ID: LCS 680-316760/2-A Matrix: Water Prep Type: Total Recoverable

Prep Batch: 316760

Analysis Batch: 317041 LCS LCS Spike Added %Rec Limits Analyte Result Qualifier Unit 5.11 102 75 - 125 fron 5.00 ma/L 102 75 .. 125 Iron, Dissolved 5.00 5 11 mg/L 75 \_ 125 Manganese 0,500 0.533 mg/L 107 Manganese, Dissolved 0.500 0.533 mg/L 107 75.125

Method: 310.1 - Alkalinity

Lab Sample ID: MB 680-317255/5

Matrix: Water

Analysis Batch: 317255

Client Sample ID: Method Blank Prep Type: Total/NA

Oil Fac Result Qualifier RL RL Unit D Prepared Analyzed Analyte 5.0 5.0 Ū mq/L 02/25/14 15:39 Alkalinity 02/25/14 15:39 mg/L 5.0 U 5.0 Carbon Dioxide, Free

Client Sample ID: Lab Control Sample Lab Sample ID: LCS 680-317255/6 Matrix: Water Prep Type: Total/NA

Analysis Batch: 317255

Spike LCS LCS %Rec. %Rec Limits Analyte Added Result Qualifier Unit 250 80 - 120 Alkalinity 239 mg/L

Matrix: Water

Analysis Batch: 317255

LCSD LCSD %Rec. RPD Spike Limit %Rec Limits RPD Analyte Added Result Qualifier Unit D 98 80 - 120 30 Alkalinity 250 245 mg/L

Lab Sample ID: 680-98831-1 DU

Lab Sample ID: LCSD 680-317255/14

Matrix: Water

Analysis Batch: 317255

Client Sample ID: CPA-MW-4D-0214

Client Sample ID: Method Blank

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Type: Total/NA

Prep Type: Total/NA

Sample Sample DU DU RPD Analyte Result Qualifier Result Qualifier Unit RPD Limit 600 584 3 30 Alkalinity ma/L 29 27.4 5 30 Carbon Dioxide, Free mg/L

Method: 325.2 - Chloride

Lab Sample ID: MB 680-317298/26

Matrix: Water

Analysis Batch: 317298

MR MR

Dil Fac Analyte Result Qualifier RL MDL Unit Prepared Analyzed 02/25/14 12:48 Chloride 1.0 U 1.0 mg/L

		Q	Sample	Resul	ts					
client: Solutia Inc. Project/Site: WGK Long Term Monitor	ing - 1Q14							TestAme	rica Job ID: 680- SDG:	98831-1 KPS11
Method: 325.2 - Chloride (Cont	tinued)									
Lab Sample ID: LCS 680-317298/18	;						Clie	nt Sample	ID: Lab Control	Sample
Matrix: Water									Prep Type:	Total/N/
Analysis Batch: 317298										
			Spike		LCS				%Rec.	
Analyte			Added		Qualifier	Unit			Limits	
Chloride			25.0	26.3		mg/L		105	85 - 115	
lethod: 353.2 - Nitrogen, Nitra	ate-Nitrite							.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		
Lab Sample ID: MB 680-316777/13								Client S	ample ID: Metho	od Blan
Matrix: Water									Prep Type:	Total/N
Analysis Batch: 316777										
		MB	_				_			5.4 F
Analyte	Result 0.050	Qualifier		₹L	MDL Unit		D	Prepared	02/21/14 17:19	Dil Fa
Nitrate as N	0.050	U"	0.0	50	mg/L				02/21/14 17.19	
Lab Sample ID: LCS 680-316777/14 Matrix: Water	ļ						Clie	nt Sample	ID: Lab Control Prep Type:	
Analysis Batch: 316777			Spike	LCS	LCS				%Rec.	
Analyte			Added		Qualifier	Unit	ı	D %Rec	Limits	
Nitrate as N			0.500	0.545		mg/L		109	90 - 110	
Nitrate Nitrite as N			1.00	1.05		mg/L		105	90 - 110	
Nitrite as N			0.500	0.507		mg/L		101	90 - 110	
Lab Sample ID: 680-98831-1 DU							С	lient Sam	ple ID: CPA-MW	
Matrix: Water									Prep Type:	I ota!/N
Analysis Batch: 316777	Sample Sam	nlo		DII	DU					RF
Analyte .	Result Qua	-			Qualifier	Unit		D	RP	
Nitrate as N	0.050 U^			0.050		mg/L			N	ic
lethod: 375.4 - Sulfate										
Lab Sample ID: MB 680-317304/8								Client S	Sample ID: Meth	od Blar
Matrix: Water									Prep Type:	Total/N
Analysis Batch: 317304										
		MB								
Analyte Sulfate	Result 5.0	Qualifier U		RL  5.0	MDL Unit mg/L		D	Prepared	Analyzed 02/25/14 13:55	Díl Fa
					Ū					
Lab Sample ID: LCS 680-317304/7							Clie	ent Sample	D: Lab Contro	l Samp
Matrix: Water									Prep Type:	Total/N
Analysis Batch: 317304									A/ B	
A - a but-			Spike		LCS	Mate		D #/D+-	%Rec.	
Analyte			Added		Qualifier	Unit		D %Rec 104	Limits 75 - 125	
Sulfate			20.0	20.8		mg/L		104	10 - 120	
Lab Sample ID: 680-98831-1 MS Matrix: Water							C	lient Sam	ple ID: CPA-MW Prep Type:	
Analysis Batch: 317304										
	Sample Sam	nla	Snike	uc	MS				%Rec	

TestAmerica Savannah

%Rec.

Limits

75 - 125

D

Unit

mg/L

%Rec

101

MS MS

202

Result Qualifier

Spike

Added

200

Sample Sample

50 U

Analyte

Suifate

Result Qualifier

			QC	: Samp	ole ł	≺esui	ts							
Client: Solutia Inc. Project/Site: WGK Long Term Monitori	ng - 1Q1	14								T	「estAme	rica Job ID: ( Si		8831- (PS11:
lethod: 375.4 - Sulfate (Contin	.,													
Lab Sample ID: 680-98831-1 MSD	<b>,</b>									Clie	nt Samı	ole ID: CPA-I	MW-4	D-021
Matrix: Water												Prep Ty		
Analysis Batch: 317304													-	
	Sample	Sam	ple	Spike		MSD	MSD					%Rec.		RP
Analyte	Result	Qual	ifier	Added		Result	Qualifier	Unit		D	%Rec	Limits	RPD	Lin
Sulfate	50	U		200		199		mg/L			100	75 - 125	2	3
lethod: 415.1 - DOC														
Lab Sample ID: MB 680-317615/2-A											Client S	iample ID: M	ethoc	d Blan
Matrix: Water												Prep Typ	e: Dis	solve
Analysis Batch: 317610														
			MB						_	_				
Analyte	Re	~~~	Qualifier		RL		MDL Unit	~~~~	D	P1	repared	Analyze		DIIF
Dissolved Organic Carbon		1.0	U		1.0		mg/L					02/26/14 17	:21	
_ab Sample ID: LCS 680-317615/1-A									CI	lient	Sample	D: Lab Cor	ntrol S	Samp
Matrix: Water											•	Prep Type		
Analysis Batch: 317610														
				Spike		LCS	LCS					%Rec.		
Analyte				Added		Result	Qualifier	Unit		D	%Rec	Limits		
Dissolved Organic Carbon				20.0		20.4		mg/L			102	80 - 120		
lethod: 415.1 - TOC			1		· · · · · · · · · · · · · · · · · · ·			•				•		
Lab Sample ID: MB 680-318039/26											Client S	Sample ID: M	lethod	d Blar
Matrix: Water												Prep Ty	pe: To	otal/N
Analysis Batch: 318039														
• • •	_	MB							_	_				50.5
Analyte Total Organic Carbon	Re		Qualifier		RL		MDL Unit		_ D		repared	Analyze 03/03/14 00		Dil F
Olai Organic Carbon		1.0	U		1.0		mg/L					03/03/14 00	J,43	
Lab Sample ID: LCS 680-318039/34									С	lient	Sample	iD: Lab Co	ntrol S	Samp
Matrix: Water												Prep Ty		
Analysis Batch: 318039													-	
				Spike		LCS	LCS					%Rec.		
Analyte				Added		Result	Qualifier	Unit		D	%Rec	Limits		
Total Organic Carbon				20.0		21.1		mg/L			105	80 - 120		
Lab Sample ID: LCSD 680-318039/3	5							C	Client	Sam	ple ID:	Lab Control		
Matrix: Water												Prep Ty	pe: To	otal/N
Analysis Batch: 318039														

TestAmerica Savannah

%Rec.

Limits

80 - 120

%Rec

103

RPD

Limit

25

RPD

Spike

Added

20.0

Analyte

Total Organic Carbon

LCSD LCSD

20.7

Result Qualifier

Unit

mg/L

#### **QC Association Summary**

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98831-1

SDG: KPS115

GC/MS VOA					
Analysis Batch: 318232	!				
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-98831-1	CPA-MW-4D-0214	Total/NA	Water	8260B	
LCS 680-318232/4	Lab Control Sample	Total/NA	Water	8260B	
LCSD 680-318232/5	Lab Control Sample Dup	Total/NA	Water	8260B	
MB 680-318232/8	Method Blank	Total/NA	Water	8260B	
nalysis Batch: 318233	3				
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-98831-3	1Q14 LTM Trip Blank #10	Total/NA	Water	8260B	
LCS 680-318233/4	Lab Control Sample	Total/NA	Water	8260B	
LCSD 680-318233/5	Lab Control Sample Dup	Total/NA	Water	8260B	
MB 680-318233/8	Method Blank	Total/NA	Water	8260B	
nalysis Batch: 318241	I				
Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batch
680-98831-1 - DL	CPA-MW-4D-0214	Total/NA	Water	8260B	
LCS 680-318241/4	Lab Control Sample	Total/NA	Water	8260B	
LCSD 680-318241/5	Lab Control Sample Dup	Total/NA	Water	8260B	
MB 680-318241/8	Method Blank	Total/NA	Water	8260B	
rep Batch: 316953					
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-98831-1	CPA-MW-4D-0214	Total/NA	Water	3520C	
LCS 680-316953/6-A	Lab Control Sample	Total/NA	Water	3520C	
LCSD 680-316953/7-A	Lab Control Sample Dup	Total/NA	Water	3520C	
MB 680-316953/5-A	Method Blank	Total/NA	Water	3520C	
nalysis Batch: 317351	l				
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 680-316953/6-A	Lab Control Sample	Total/NA	Water	8270D	31695
LCSD 680-316953/7-A	Lab Control Sample Dup	Total/NA	Water	8270D	31695
MB 680-316953/5-A	Method Blank	Total/NA	Water	8270D	31695
nalysis Batch: 317966	5				
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batcl
680-98831-1	CPA-MW-4D-0214	Total/NA	Water	8270D	31695
C VOA					
nalysis Batch: 317026	3				
Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batc
680-98831-1	CPA-MW-4D-0214	Total/NA	Water	RSK-175	
LCS 680-317026/4	Lab Control Sample	Total/NA	Water	RSK-175	
LCS 680-317026/5	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 680-317026/6	Lab Control Sample Dup	Total/NA	Water	RSK-175	
	· ·				
LCSD 680-317026/7	Lab Control Sample Dup	Total/NA	Water	RSK-175	

#### **QC Association Summary**

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98831-1

SDG: KPS115

Vietals					
Prep Batch: 316760					
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-98831-1	CPA-MW-4D-0214	Total Recoverable	Water	3005A	
680-98831-2	CPA-MW-4D-F(0.2)-0214	Dissolved	Water	- 3005A	
LCS 680-316760/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
MB 680-316760/1-A	Method Blank	Total Recoverable	Water	3005A	
nalysis Batch: 31704	1				
Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batc
680-98831-1	CPA-MW-4D-0214	Total Recoverable	Water	6010C	31676
680-98831-2	CPA-MW-4D-F(0.2)-0214	Dissolved	Water	6010C	31676
LCS 680-316760/2-A	Lab Control Sample	Total Recoverable	Water	6010C	31676
MB 680-316760/1-A	Method Blank	Total Recoverable	Water	6010C	31676
General Chemistry					
nalysis Batch: 31677	7				
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batc
680-98831-1	CPA-MW-4D-0214	Total/NA	Water	353.2	
680-98831-1 DU	CPA-MW-4D-0214	Total/NA	Water	353.2	
LCS 680-316777/14	Lab Control Sample	Total/NA	Water	353.2	
MB 680-316777/13	Method Blank	Total/NA	Water	353.2	
Inalysis Batch: 31725	5	,			
Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Bato
680-98831-1	CPA-MW-4D-0214	Total/NA	Water	310.1	
680-98831-1 DU	CPA-MW-4D-0214	Total/NA	Water	310.1	
LCS 680-317255/6	Lab Control Sample	Total/NA	Water	310.1	
LCSD 680-317255/14	Lab Control Sample Dup	Total/NA	Water	310.1	
MB 680-317255/5	Method Blank	Total/NA	Water	310.1	
Analysis Batch: 31729	8				
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Bato
680-98831-1	CPA-MW-4D-0214	Total/NA	Water	325.2	
LCS 680-317298/18	Lab Control Sample	Total/NA	Water	325.2	
MB 680-317298/26	Method Blank	Total/NA	Water	325.2	
nalysis Batch: 31730	4				
Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Bate
680-98831-1	CPA-MW-4D-0214	Total/NA	Water	375.4	The tenter of property of the
680-98831-1 MS	CPA-MW-4D-0214	Total/NA	Water	375.4	
680-98831-1 MSD	CPA-MW-4D-0214	Total/NA	Water	375.4	
LCS 680-317304/7	Lab Control Sample	Total/NA	Water	375.4	
MB 680-317304/8	Method Blank	Total/NA	Water	375.4	
nalysis Batch: 31761	0				
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Bato
680-98831-2	CPA-MW-4D-F(0.2)-0214	Dissolved	Water	415.1	
LCS 680-317615/1-A	Lab Control Sample	Dissolved	Water	415.1	31761

#### **QC Association Summary**

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98831-1

SDG: KPS115

#### General Chemistry (Continued)

#### Filtration Batch: 317615

Lab Sample (D	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 680-317615/1-A	Lab Control Sample	Dissolved	Water	FILTRATION	PO-01-01-01-01-01-01-01-01-01-01-01-01-01-
MB 680-317615/2-A	Method Blank	Dissolved	Water	FILTRATION	

#### Analysis Batch: 318039

***************************************	Lab Sample ID 680-98831-1	Client Sample ID CPA-MW-4D-0214	Prep Type Total/NA	Matrix Water	Method 415.1	Prep Batch
	LCS 680-318039/34	Lab Control Sample	Total/NA	Water	415.1	
W. Carlotte	LCSD 680-318039/35	Lab Control Sample Dup	Total/NA	Water	415.1	
2,7417,744	MB 680-318039/26	Method Blank	Total/NA	Water	415.1	



















#### Lab Chronicle

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98831-1

SDG: KPS115

Client Sample ID: CPA-MW-4D-0214

Date Collected: 02/20/14 12:30 Date Received: 02/21/14 09:26 Lab Sample ID: 680-98831-1

Matrix: Water

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	318232	03/05/14 08:25	JD1	TAL SAV
Total/NA	Analysis	8260B	DL.	2	318241	03/05/14 15:44	MMT	TAL SAV
Total/NA	Prep	3520C			316953	02/24/14 15:35	RBS	TAL SAV
Total/NA	Analysis	8270D		1	317966	03/03/14 17:15	SMC	TAL SAV
Total/NA	Analysis	RSK-175		1	317026	02/25/14 15:38	TAR	TAL SAV
Total Recoverable	Prep	3005A			316760	02/21/14 15:49	ВЈВ	TAL SAV
Total Recoverable	Analysis	6010C		1	317041	02/24/14 14:54	BCB	TAL SAV
Total/NA	Analysis	353.2		1	316777	02/21/14 17:25	GRX	TAL SAV
Total/NA	Analysis	310.1		1	317255	02/25/14 16:25	LBH	TAL SAV
Total/NA	Analysis	325,2		5	317298	02/25/14 12:42	JME	TAL SAV
Total/NA	Analysis	375.4		10	317304	02/25/14 14:18	JME	TAL SAV
Total/NA	Analysis	415.1		1	318039	03/03/14 05:41	JER	TAL SAV

Client Sample ID: CPA-MW-4D-F(0.2)-0214

Date Collected: 02/20/14 12:30

Date Received: 02/21/14 09:26

Lab Sample ID: 680-98831-2

Matrix: Water

•	Batch	Batch	÷	Dilution	Batch	Prepared		•
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			316760	02/21/14 15:49	ВЈВ	TAL SAV
Dissolved	Analysis	6010C		1	317041	02/24/14 14:59	BCB	TAL SAV
Dissolved	Analysis	415.1		1	317610	02/26/14 21:01	CMP	TAL SAV

Client Sample ID: 1Q14 LTM Trip Blank #10

Date Collected: 02/20/14 12:30

Date Received: 02/21/14 09:26

	Lab	Sampl	e ID:	680-9	8831-3
--	-----	-------	-------	-------	--------

Matrix: Water

		Batch	Batch		Dilution	Batch	Prepared		
	Ргер Туре	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
1	Total/NA	Analysis	8260B		1	318233	03/05/14 01:27	JD1	TAL SAV

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

TestAmerica Savannah

MAR 1 4 2014

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# MAR 1 4 2014 MM

#### Savannah

5102 LaRoche Avenue Savannah, GA 31404

phone 912.354.7858 fax 912.352.0165

### Chain of Custody Record



TestAmerica Laboratories, Inc.

Client Contact	Project Ma	nager; Bol	Billman			Site	Сол	tact:	Mic	hael	Corl	bett			76.0				佛			COC No:
URS Corporation	Tel/Fax: (3	14) 743-411	08			Lat	Lab Contact: Michele Kersey Carrier:				Fel Ex					/ of/ COCs						
1001 Highlands Plaza Drive West, Suite 300		Analysis T	urnaround	Time		J		Т		T	Ī					П						
St. Louis, MO 63110	Calendar	(C) or Wo	rk Days (W	_ C		]				5.4							ĺ					21563600.00001
(314) 429-0100 Phone	TA	T if different f	rom Below	5-10-d	prof					33	. <u>.</u>											
(314) 429-0462 FAX			weeks							ate I	RSK 175			8								SDG No.
Project Name: 1Q14 LTM GW Sampling		1	week					KOLOC	3	Suff	RS			8						ĺ		
Site: Solutia WG Krummrich Facility		:	2 days				ءُ ا	\$   5	3 3	5.26	s by	~		d e		l						
PO# .			day			ā	500	70	<u>.</u>	y 32	18	353.	5.	3	5.1							
Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cost	Filtered Sample	VOCs by \$260B	Total Estata by	Alk/CO2 by 310.1	Chloride by 325.2/Sulfate by 375.4	Dissolved Gases	Nitrate by 353.2	TOC by 415.1	Dissolved FeMin by 6010C	DOC by 415.1	***************************************						Sample Specific Notes:
CPA-MW-4D-0214 CPA-MW-4D+(0.2)-0214	2/20/14	1230	G	Water	16		3	2 1	1	1	3	2	3			***************************************						
CPA-MW-4D=(0.2)-0214	20/14	1230	G	Water	2	x								1	1							
								T											***************************************			-:
,						П	1	T	┪	Τ				$\dashv$	7				1	$\dashv$	$\top$	
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Preservation Used: 1= Icc. 2= HCi; 3= H2SO4; 4=HNO3; 5=NaO	- T- demonstration			<del></del>			2	1 4	1	1	1	3,1	3	4	2					1	Ī	
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#### Login Sample Receipt Checklist

Client: Solutia Inc.

Job Number: 680-98831-1

SDG Number: KPS115

Login Number: 98831

List Source: TestAmerica Savannah

List Number: 1

Creator: Conner, Keaton

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>N/A</td> <td></td>	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	Ттие	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	1
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



#### **Certification Summary**

Client: Solutia Inc.

Project/Site: WGK Long Term Monitoring - 1Q14

TestAmerica Job ID: 680-98831-1

SDG: KPS115

#### Laboratory: TestAmerica Savannah

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
	AFCEE		SAVLAB	
A2LA	DoD ELAP		399.01	02-28-15
A2LA	ISO/IEC 17025		399.01	02-28-15
Alabama	State Program	4	41450	06-30-14
Arkansas DEQ	State Program	6	88-0692	01-31-15
California	NELAP	9	3217CA	07-31-14
Colorado	State Program	8	N/A	12-31-14
Connecticut	State Program	1	PH-0161	03-31-15
Florida	NELAP	4	E87052	06-30-14
GA Dept. of Agriculture	State Program	4	N/A	06-30-14
Georgia	State Program	4	N/A	06-30-14
Georgia	State Program	4	803	06-30-14
Guam	State Program	9	09-005r	04-17-14 *
-lawaii	State Program	9	N/A	06-30-14
Ilinois	NELAP	5	200022	11-30-14
ndiana	State Program	5	N/A	06-30-14
owa	State Program	7	353	07-01-15
Kentucky (DW)	State Program	4	90084	12-31-14
Kentucky (UST)	State Program	4	18	06-30-14
ouisiana	NELAP	6	LA100015	12-31-14
Maine	State Program	1	GA00006	08-16-14
Maryland	State Program	3	250	12-31-14
Massachusetts	State Program	1 '	M-GA006	06-30-14
Michigan	State Program	5	9925	06-30-14
Mississippi	State Program	4	N/A	06-30-14
Montana	State Program	8	CERT0081	01-01-15
Nebraska	State Program	7	TestAmerica-Savannah	06-30-14
New Jersey	NELAP	2	GA769	06-30-14
New Mexico	State Program	6	N/A	06-30-14
New York	NELAP	2	10842	03-31-14 *
North Carolina DENR	State Program	4	269	12-31-14
North Carolina DHHS	State Program	4	13701	07-31-14
Oklahoma	State Program	6	9984	08-31-14
Pennsylvania	NELAP	3	68-00474	06-30-14
Puerto Rico	State Program	2	GA00006	12-31-14
South Carolina	State Program	4	98001	06-30-14
Теппеssee	State Program	4	TN02961	06-30-14
Texas	NELAP	6	T104704185-08-TX	11-30-14
JSDA	Federal	-	SAV 3-04	04-07-14 *
/irginia	NELAP	3	460161	06-14-14
Washington	State Program	10	C1794	06-10-14
West Virginia DEP	State Program	3	94	06-30-14
West Virginia DHHR	State Program	3	9950C	12-31-14
Wisconsin	State Program	5	999819810	08-31-14
Wyoming	State Program	8	8TMS-L	06-30-14

MAR 1 4 201

<sup>\*</sup> Expired certification is currently pending renewal and is considered valid.

# Appendix E Microbial Insights Data Package



10515 Research Drive Knoxville, TN 37932 Phone: (865) 573-8188 Fax: (865) 573-8133

Client: Nathan McNurlen Phone:

**URS Corp** 

1001 Highlands Plaza Dr. West

Suite 300

St. Louis, MO 63110 Fax:

Client Project #: 21563600 Client Project Name: Solutia WGK 1Q14 GW

Purchase Order #:

Analysis Requested: PLFA, Stable Isotope Probing, Standard Bio-Trap

#### Reviewed By:

Eri Huchen Music

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#### MICROBIAL INSIGHTS, INC.

10515 Research Dr., Knoxville, TN 37932 Tel. (865) 573-8188 Fax. (865) 573-8133

**PLFA** 

Client: URS Corp

Project: Solutia WGK 1Q14 GW

MI Project Number: 084LC
Date Received: 03/25/2014

#### **Sample Information**

Sample Name:	BSA-MW-1S-03 14	BSA-MW-2D-03 14	BSA-MW-3D -0314	BSA-MW-4D-0 314	BSA-MW-5D-03 14
Sample Date:	03/24/2014 Std. Bio-Trap	03/24/2014 Adv. Bio-Trap	03/24/2014 Std. Bio-Trap	03/24/2014 Std. Bio-Trap	03/24/2014 Std. Bio-Trap
Sample Matrix: Analyst:	BJ	BJ	BJ	BJ	BJ
Biomass Concentrations					
Total Biomass (cells/bead)	5.36E+04	3.25E+04	2.73E+04	1.71E+04	7.37E+04
Community Structure (% total PLFA)					
Firmicutes (TerBrSats)	7.20	0.00	0.00	0.00	0.00
Proteobacteria (Monos)	69.98	78.64	68.57	65.10	87.84
Anaerobic metal reducers (BrMonos)	0.00	0.00	0.00	0.00	0.00
SRB/Actinomycetes (MidBrSats)	0.00	0.00	0.00	0.00	0.00
General (Nsats)	22.81	21.37	31.43	34.90	12.17
Eukaryotes (polyenoics)	0.00	0.00	0.00	0.00	0.00
Physiological Status (Proteobacteria onl	(y)				
Slowed Growth	0.88	0.15	0.13	0.52	0.07
Decreased Permeability	0.50	0.00	0.00	0.00	0.00

Legend:

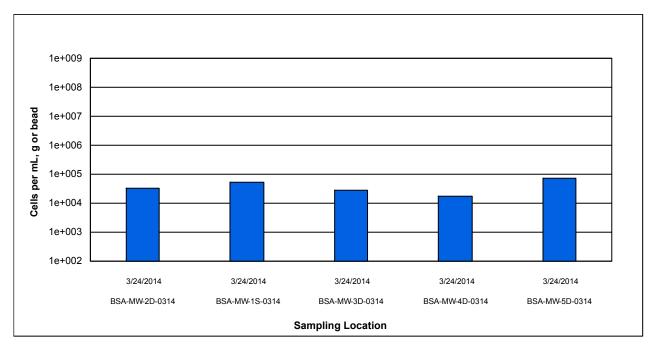
NA = Not Analyzed NS = Not Sampled

PLFA

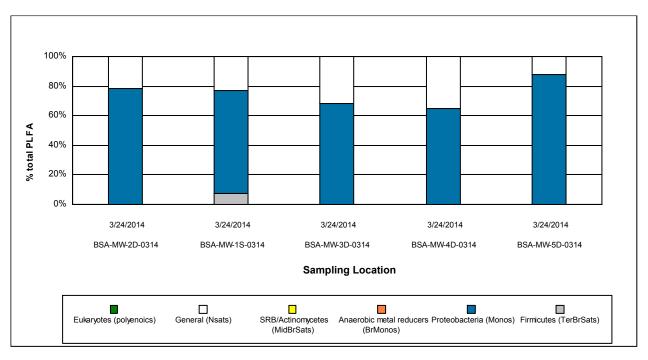
10515 Research Dr., Knoxville, TN 37932 Tel. (865) 573-8188 Fax. (865) 573-8133

 Client:
 URS Corp
 MI Project Number:
 084LC

 Project:
 Solutia WGK 1Q14 GW
 Date Received:
 03/25/2014



**Figure 1.** Biomass content is presented as a cell equivalent based on the total amount of phospholipid fatty acids (PLFA) extracted from a given sample. Total biomass is calculated based upon PLFA attributed to bacterial and eukaryotic biomass



**Figure 2.** Relative percentages of total PLFA structural groups in the samples analyzed. Structural groups are assigned according to PLFA chemical structure, which is related to fatty acid biosynthesis.

#### MICROBIAL INSIGHTS, INC.

10515 Research Dr., Knoxville, TN 37932 Tel. (865) 573-8188 Fax. (865) 573-8133

**PLFA** 

Client: URS Corp

Project: Solutia WGK 1Q14 GW

MI Project Number: 084LC
Date Received: 03/25/2014

#### **Sample Information**

Sample Name:	CPA-MW-1D-03	CPA-MW-2D-03	CPA-MW-3D	CPA-MW-4D-0	CPA-MW-5D-0
	14	14	-0314	314	314
Sample Date:	03/24/2014	03/24/2014	03/24/2014	03/24/2014	03/24/2014
Sample Matrix:	Std. Bio-Trap	Std. Bio-Trap	Adv. Bio-Trap	Std. Bio-Trap	Std. Bio-Trap
Analyst:	BJ	ВЈ	BJ	BJ	BJ

	2.84E+04	8.33E+04	8.26E+04	4.09E+04	1.69E+04
nmunity Structure (% total PLFA)					
Firmicutes (TerBrSats)	0.00	0.00	1.95	0.00	0.00
Proteobacteria (Monos)	66.75	74.19	47.58	69.39	66.31
Anaerobic metal reducers (BrMonos)	0.00	0.00	0.00	0.00	0.00
SRB/Actinomycetes (MidBrSats)	0.00	0.00	0.00	0.00	0.00
General (Nsats)	33.25	25.81	32.10	27.76	33.70
Eukaryotes (polyenoics)	0.00	0.00	18.36	2.84	0.00

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0.00

0.00

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Legend:

NA = Not Analyzed NS = Not Sampled

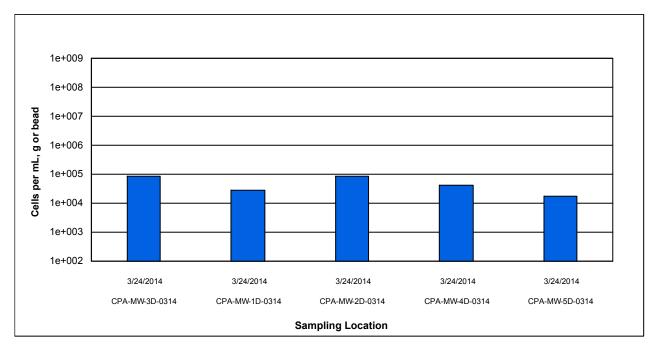
**Decreased Permeability** 

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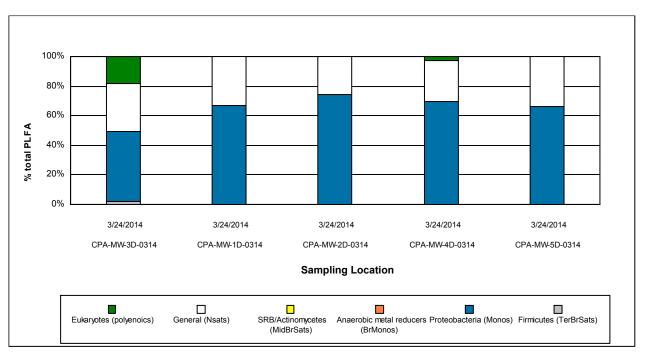
10515 Research Dr., Knoxville, TN 37932 Tel. (865) 573-8188 Fax. (865) 573-8133

 Client:
 URS Corp
 MI Project Number:
 084LC

 Project:
 Solutia WGK 1Q14 GW
 Date Received:
 03/25/2014



**Figure 1.** Biomass content is presented as a cell equivalent based on the total amount of phospholipid fatty acids (PLFA) extracted from a given sample. Total biomass is calculated based upon PLFA attributed to bacterial and eukaryotic biomass



**Figure 2.** Relative percentages of total PLFA structural groups in the samples analyzed. Structural groups are assigned according to PLFA chemical structure, which is related to fatty acid biosynthesis.



10515 Research Drive Knoxville, TN 37932 Phone: (865) 573-8188 Fax: (865) 573-8133

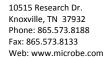
Client Project #: 21563600 Client Project Name: Solutia WGK 1Q14 GW

Purchase Order #:

Comments: Please note that the total biomass result for samples BSA-MW-2D, BSA-MW-3D,

BSA-MW-4D, CPA-MW-1D, CPA-MW-4D, and CPA-MW-5D fell between the method

detection limit and the reporting limit for the PLFA analysis.



nathan.mcnurlen@urs.com

Phone: (314) 429-0100

**Email:** 



# **SITE LOGIC Report**

Stable Isotope Probing (SIP) Study

Contact: Nathan McNurlen

Address: URS Corporation – St. Louis MO

1001 Highlands Plaza Drive West

Suite 300

St. Louis, MO 63110

**084LC** Report Date: 04/23/2014

**Project:** Solutia WGK 1Q14 GW; # 21563600

**Comments:** 

**MI** Identifier:

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## **Executive Summary**

A Stable Isotope Probing (SIP) study was performed to determine whether biodegradation of benzene and chlorobenzene is occurring under existing site conditions. Bio-Trap® samplers baited with <sup>13</sup>C labeled benzene and <sup>13</sup>C labeled chlorobenzene were deployed in monitoring wells BSA-MW-2D-0314 and CPA-MW-3D-0314, respectively. Following a deployment period, the Bio-Traps were recovered to quantify <sup>13</sup>C incorporation into biomass and dissolved inorganic carbon (DIC). A complete summary of the SIP results is provided in Table 1 and Figures 1 through 5. Tables 2 and 3 and Figures 6 through 9 contain summaries of PLFA analysis performed on standard Bio-Trap samplers deployed in BSA and CPA monitoring wells.

#### Stable Isotope Probing (SIP)

- Incorporation of <sup>13</sup>C into the biomass in wells BSA-MW-2D-0314 and CPA-MW-3D-0314 conclusively demonstrated that benzene and chlorobenzene biodegradation occurred under existing site conditions.
  - o Total PLFA biomass concentrations in both wells (3.25E+04 and 8.26E+04, respectively) were within the low range.
  - $_{\odot}$  The average PLFA  $\delta^{13}$ C values of wells BSA-MW-2D-0314 and CPA-MW-3D-0314 were 632% and 38%, respectively, which showed incorporation of  $^{13}$ C-labeled contaminant into the microbial biomass.
  - $\circ$  The average DIC  $\delta^{13}$ C value (84%) in well BSA-MW-2D-0314, although in the low range, conclusively showed that benzene was mineralized during the deployment period.
  - $\circ$  However, the average DIC  $\delta^{13}$ C value (0.6%) in well CPA-MW-3D-0314 was near background levels and indicated little to no mineralization of chlorobenzene occurred, at least during the deployment period.
  - The PLFA community structure in both wells was mostly comprised of monounsaturates, indicators of Proteobacteria, and normal saturates. Indicators for eukaryotes and Firmicutes were detected in CPA-MW-3D-0314.

#### **PLFA Analysis - Standard Bio-Traps**

2

- Total biomass concentrations in the BSA wells fell within the low range (~10<sup>4</sup> cells/bead). Total biomass in wells BSA-MW-2D-0314, BSA-MW-3D-0314, and BSA-MW-4D-0314 fell between the reporting limit and the method detection limit for the PLFA analysis.
  - Monounsaturates were the primary PLFA group in the BSA wells suggesting that microbial communities in these
    wells were mostly Proteobacteria. The next most abundant group was the normal saturates. Indicators for
    Firmicutes were also detected in BSA-MW-1S-0314.
- In the CPA wells total PLFA biomass concentrations also fell within the lower range (~10<sup>4</sup> cells/bead). Total biomass in wells CPA-MW-1D-0314, CPA-MW-4D-0314, and CPA-MW-5D-0314 fell between the reporting limit and the method detection.
  - The microbial community structures of the CPA wells were mostly similar to the BSA wells. Indicators for eukaryotes were detected in CPA-MW-3D-0314 and CPA-MW-4D-0314, while Firmicutes were only detected in CPA-MW-3D-0314.



# Overview of Approach

#### Stable Isotope Probing (SIP)

Stable isotope probing (SIP) is an innovative method to track the environmental fate of a "labeled" contaminant of concern to unambiguously demonstrate biodegradation. Two stable carbon isotopes exist in nature – carbon 12 (<sup>12</sup>C) which accounts for 99% of carbon and carbon 13 (<sup>13</sup>C) which is considerably less abundant (~1%). With the SIP method, the Bio-Trap® sampler is baited with a specially synthesized form of the contaminant containing <sup>13</sup>C labeled carbon. Since <sup>13</sup>C is rare, the labeled compound can be readily differentiated from the contaminants present at the site. Following deployment, the Bio-Trap® is recovered and three approaches are used to conclusively demonstrate biodegradation of the contaminant of concern.

- The loss of the labeled compound provides an estimate of the degradation rate (% loss of <sup>13</sup>C).
- Quantification of <sup>13</sup>C enriched phospholipid fatty acids (PLFA) indicates incorporation into microbial biomass.
- Quantification of <sup>13</sup>C enriched dissolved inorganic carbon (DIC) indicates contaminant mineralization.

#### Phospholipid Fatty Acids (PLFA)

PLFA are a primary component of the membrane of all living cells including bacteria. PLFA decomposes rapidly upon cell death (1, 2), so the total amount of PLFA present in a sample is indicative of the viable biomass. When combined with stable isotope probing (SIP), incorporation of <sup>13</sup>C into PLFA is a conclusive indicator of biodegradation.

Some organisms produce "signature" types of PLFA allowing quantification of important microbial functional groups (e.g. iron reducers, sulfate reducers, or fermenters). The relative proportions of the groups of PLFA provide a "fingerprint" of the microbial community. In addition, *Proteobacteria* modify specific PLFA during periods of slow growth or in response to environmental stress providing an index of their health and metabolic activity.

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# Results

Table 1. Summary of the results obtained from the Bio-Trap® Units. Interpretation guidelines and definitions are found later in the document.

Sample Name	BSA-MW-2D-0314	CPA-MW-3D-0314
<sup>13</sup> C Contaminant Loss		
<sup>13</sup> C Benzene Pre-deployment (μg/bead)	102 ± 11	
<sup>13</sup> C Benzene Post-deployment (μg/bead)	93 ± 5	
<sup>13</sup> C Chlorobenzene Pre-deployment (μg/bead)		126 ± 11
<sup>13</sup> C Chlorobenzene Post-deployment (μg/bead)		81 ± 4
Biomass & <sup>13</sup> C Incorporation		
Total Biomass (Cells/bead)	3.25E+04	8.26E+04
<sup>13</sup> C Enriched Biomass (Cells/bead)	2.01E+02	5.61E+02
Average PLFA Del (‰)	632	38
Maximum PLFA Del (‰)	632	77
<sup>13</sup> C Mineralization		
DIC Del (‰)	84	0.6
% 13C	1.20	1.11
Community Structure (% total PLFA)		
Firmicutes (TerBrSats)	0.00	1.95
Proteobacteria (Monos)	78.64	47.58
Anaerobic metal reducers (BrMonos)	0.00	0.00
Actinomycetes (MidBrSats)	0.00	0.00
General (Nsats)	21.37	32.10
Eukaryotes (Polyenoics)	0.00	18.36
Physiological Status (Proteobacteria only)		
Slowed Growth	0.15	0.06
Decreased Permeability	0.00	0.00



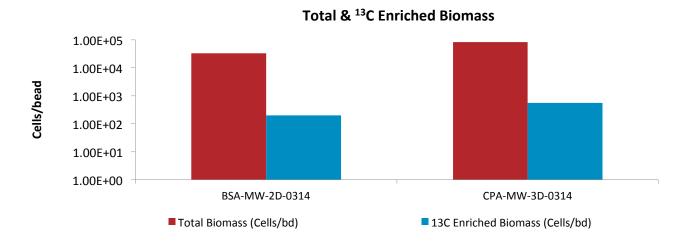
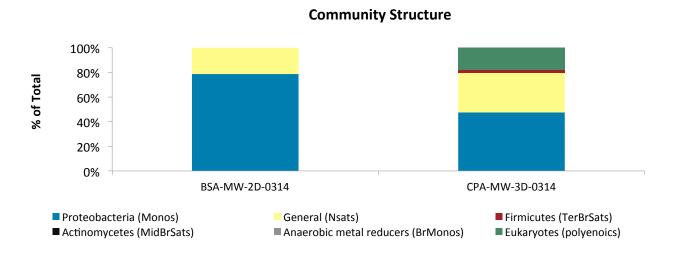


Figure 1. Biomass content is presented as a cell equivalent based on the total amount of phospholipid fatty acids (PLFA) extracted from a given sample. Total biomass is calculated based upon PLFA attributed to bacterial and eukaryotic biomass (associated with higher organisms).



**Figure 2.** Relative percentages of total PLFA structural groups in the samples analyzed. Structural groups are assigned according to PLFA chemical structure, which is related to fatty acid biosynthesis. See the table in the interpretation section for detailed descriptions of the structural groups.



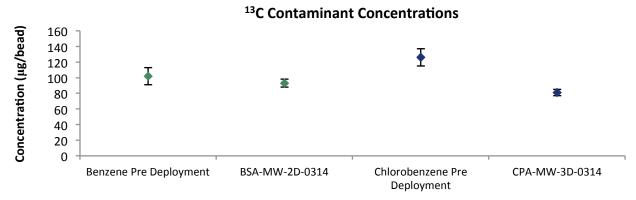
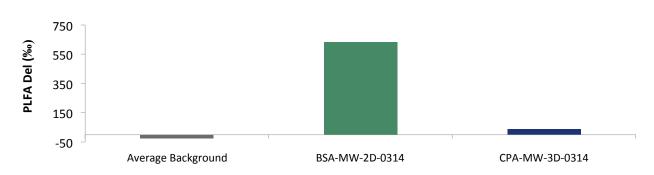
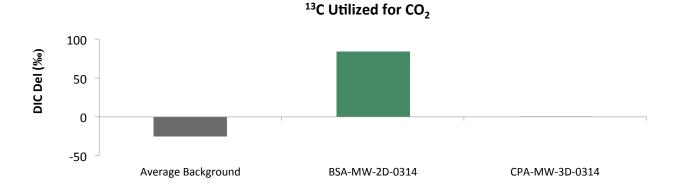


Figure 3. Comparison of Pre-deployment concentrations loaded on Bio-Sep beads to the concentrations detected after incubation.

<sup>13</sup>C Utilized for Biomass



**Figure 4.** Comparison of the average Del value obtained from PLFA biomarkers from each Bio-Trap® unit to the average background Del observed in samples not exposed to <sup>13</sup>C enriched compounds.



**Figure 5.** Comparison of the Del value obtained from DIC from each Bio-Trap® unit to the average background Del observed in samples not exposed to <sup>13</sup>C enriched compounds.

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Table 2. Summary of the PLFA results for the benzene wells obtained from the Bio-Trap® Units.

Sample Name	BSA-MW-1S- 0314	BSA-MW-2D- 0314	BSA-MW-3D- 0314	BSA-MW-4D- 0314	BSA-MW-5D- 0314
Biomass Concentration					
Total Biomass (Cells/bead)	5.36E+04	3.25E+04	2.73E+04	1.71E+04	7.37E+04
Community Structure (% total PLFA)					
Firmicutes (TerBrSats)	7.20	0.00	0.00	0.00	0.00
Proteobacteria (Monos)	69.98	78.64	68.57	65.10	87.84
Anaerobic metal reducers (BrMonos)	0.00	0.00	0.00	0.00	0.00
Actinomycetes (MidBrSats)	0.00	0.00	0.00	0.00	0.00
General (Nsats)	22.81	21.37	31.43	34.90	12.17
Eukaryotes (Polyenoics)	0.00	0.00	0.00	0.00	0.00
Physiological Status (Proteobacteria only)					
Slowed Growth	0.88	0.15	0.13	0.52	0.07
Decreased Permeability	0.50	0.00	0.00	0.00	0.00

Table 3. Summary of the PLFA results for the chlorobenzene wells obtained from the Bio-Trap® Units.

Sample Name	CPA-MW-1D- 0314	CPA-MW-2D- 0314	CPA-MW-3D- 0314	CPA-MW-4D- 0314	CPA-MW-5D- 0314
Sample Name	0314	<del>0</del> 514	0314	0314	0514
Biomass Concentration					
Total Biomass (Cells/bead)	2.84E+04	8.33E+04	8.26E+04	4.09E+04	1.69E+04
Community Structure (% total PLFA)					
Firmicutes (TerBrSats)	0.00	0.00	1.95	0.00	0.00
Proteobacteria (Monos)	66.75	74.19	47.58	69.39	66.31
Anaerobic metal reducers (BrMonos)	0.00	0.00	0.00	0.00	0.00
Actinomycetes (MidBrSats)	0.00	0.00	0.00	0.00	0.00
General (Nsats)	33.25	25.81	32.10	27.76	33.70
Eukaryotes (Polyenoics)	0.00	0.00	18.36	2.84	0.00
Physiological Status (Proteobacteria only)					
Slowed Growth	1.71	1.00	0.06	0.20	0.35
Decreased Permeability	0.00	0.00	0.00	0.00	0.00

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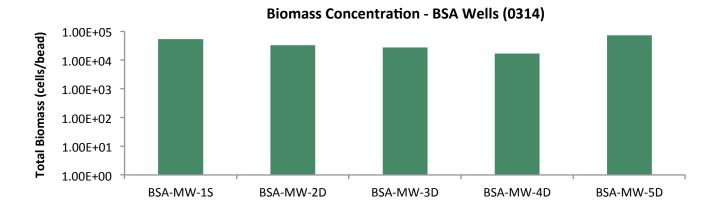
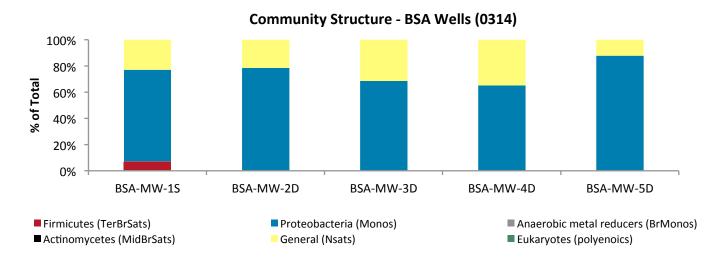


Figure 6. Biomass content is presented as a cell equivalent based on the total amount of phospholipid fatty acids (PLFA) extracted from a given sample. Total biomass is calculated based upon PLFA attributed to bacterial and eukaryotic biomass (associated with higher organisms).



**Figure 7**. Relative percentages of total PLFA structural groups in the samples analyzed. Structural groups are assigned according to PLFA chemical structure, which is related to fatty acid biosynthesis. See the table in the interpretation section for detailed descriptions of the structural groups.



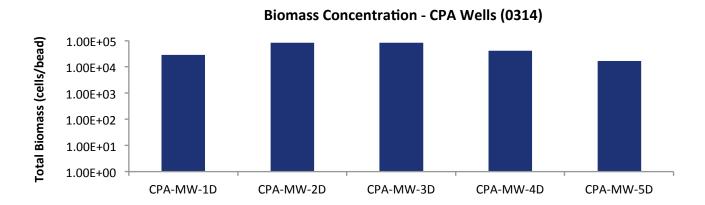
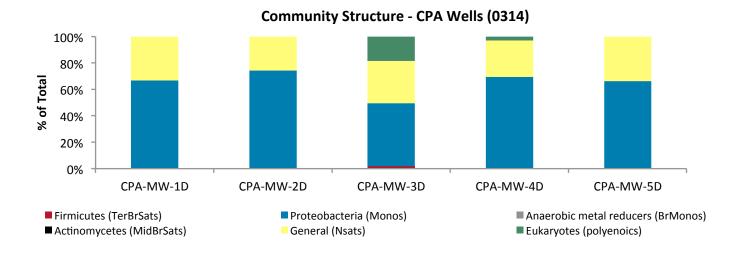


Figure 8. Biomass content is presented as a cell equivalent based on the total amount of phospholipid fatty acids (PLFA) extracted from a given sample. Total biomass is calculated based upon PLFA attributed to bacterial and eukaryotic biomass (associated with higher organisms).



**Figure 9.** Relative percentages of total PLFA structural groups in the samples analyzed. Structural groups are assigned according to PLFA chemical structure, which is related to fatty acid biosynthesis. See the table in the interpretation section for detailed descriptions of the structural groups.



# Interpretation

Interpretation of the results of the SIP Bio-Trap® study must be performed with due consideration of site conditions, site activities, and the desired treatment mechanism. The following discussion describes interpretation of results in general terms and is meant to serve as a guide.

Contaminant Concentration: Bio-Traps® are baited with a <sup>13</sup>C labeled contaminant of concern and a pre-deployment concentration is determined prior to shipping. Following deployment, Bio-Traps® are recovered for analysis including measurement of the concentration of the <sup>13</sup>C labeled contaminant remaining. Pre- and post-deployment concentrations are used to calculate percent loss.

Biomass Concentrations: PLFA analysis is one of the most reliable and accurate methods available for the determination of viable (live) biomass. Phospholipids break down rapidly upon cell death, so biomass calculations based on PLFA content do not include "fossil" lipids from dead cells. Total biomass (cells/bead) is calculated from total PLFA using a conversion factor of 20,000 cells/pmole of PLFA. When making comparisons between wells, treatments, or over time, differences of one order of magnitude or more are considered significant.

	Total Biomass	
Low	Moderate	High
10 <sup>3</sup> to 10 <sup>4</sup> cells	10 <sup>5</sup> to 10 <sup>6</sup> cells	10 <sup>7</sup> to 10 <sup>8</sup> cells

For SIP studies, the <sup>13</sup>C enriched PLFA is also determined to conclusively demonstrate contaminant biodegradation and quantify incorporation into biomass as a result of the <sup>13</sup>C being used for cellular growth. The % <sup>13</sup>C incorporation (<sup>13</sup>C enriched biomass/total biomass) is also provided in the data summary table, but the value must be interpreted carefully especially when comparing wells or treatments. Typically, biodegradation of a contaminant of concern is performed by a small subset of the total microbial community. For Bio-Traps® with large total biomass, the % <sup>13</sup>C incorporation value could be low despite significant <sup>13</sup>C labeled biomass and loss of the compound. The % <sup>13</sup>C incorporation should be viewed in light of total biomass, percent loss, and dissolved inorganic carbon (DIC) results.

 $^{13}$ C enrichment data is often reported as a del value. The del value is the difference between the isotopic ratio ( $^{13}$ C/ $^{12}$ C) of the sample (R<sub>x</sub>) and a standard (R<sub>std</sub>) normalized to the isotopic ratio of the standard (R<sub>std</sub>) and multiplied by 1,000 (units are parts per thousand, denoted ‰).

 $R_{std}$  is the naturally occurring isotopic ratio and is approximately 0.011180 (roughly 1% of naturally occurring carbon is  $^{13}$ C). The isotopic ratio,  $R_x$ , of PLFA is typically less than the  $R_{std}$  under natural conditions, resulting in a del value between -20 and -30‰. For a SIP Bio-Trap® study, biodegradation and incorporation of the  $^{13}$ C labeled compound into PLFA results in a larger  $^{13}$ C/ $^{12}$ C ratio ( $R_x$ ) and thus del values greater than under natural conditions. Typical PLFA del values are provided below.

PLFA Del (‰)							
Low	Moderate	High					
0 to 100	100 to 1,000	>1,000					

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Dissolved Inorganic Carbon (DIC): Often, bacteria can utilize the <sup>13</sup>C labeled compound as both a carbon and energy source. The <sup>13</sup>C portion used as a carbon source for growth can be incorporated into PLFA as discussed above, while the <sup>13</sup>C used for energy is oxidized to <sup>13</sup>CO<sub>2</sub> (mineralized).

 $^{13}$ C enriched CO<sub>2</sub> data is often reported as a del value as described above for PLFA. Under natural conditions, the R<sub>x</sub> of CO<sub>2</sub> is approximately the same as R<sub>std</sub> (0.01118 or about 1.1%  $^{13}$ C). For an SIP Bio-Trap® study, mineralization of the  $^{13}$ C labeled contaminant of concern would lead to a greater value of R<sub>x</sub> (increased  $^{13}$ CO<sub>2</sub> production) and thus a positive del value. As with PLFA, del values between 0 and 100% are considered low, values between 100 and 1,000% are considered moderate, and values greater than 1,000% are considered high. Thus DIC  $^{13}$ C are considered low if the value is less than 1.23%, moderate if between 1.23 and 2.24%, and high if greater than 2.24%.

Dissolved Inorganic Carbon (DIC) Del and % <sup>13</sup> C							
Low	Moderate	High					
0 to 100	100 to 1,000	>1,000					
1.11 to 1.23%	1.23 to 2.24%	>2.24%					

Community Structure (% total PLFA): Community structure data is presented as a percentage of PLFA structural groups normalized to the total PLFA biomass. The relative proportions of the PLFA structural groups provide a "fingerprint" of the types of microbial groups (e.g. anaerobes, sulfate reducers, etc.) present and therefore offer insight into the dominant metabolic processes occurring at the sample location. Thorough interpretation of the PLFA structural groups depends in part on an understanding of site conditions and the desired microbial biodegradation pathways. For example, an increase in mid chain branched saturated PLFA (MidBrSats), indicative of sulfate reducing bacteria (SRB) and *Actinomycetes*, may be desirable at a site where anaerobic BTEX biodegradation is the treatment mechanism, but would not be desirable for a corrective action promoting aerobic BTEX or MTBE biodegradation. The following table provides a brief summary of each PLFA structural group and its potential relevance to bioremediation.

Table 2. Description of PLFA structural groups.

PLFA Structural Group	General classification	Potential Relevance to Bioremediation Studies
Monoenoic (Monos)	typically fast growing, utilize many carbon sources,	Proteobacteria is one of the largest groups of bacteria and represents a wide variety of both aerobes and anaerobes. The majority of Hydrocarbon utilizing bacteria fall within the Proteobacteria
Terminally Branched Saturated (TerBrSats)	Characteristic of Firmicutes (Low G+C Gram-positive bacteria), and also found in Bacteriodes, and some Gram-negative bacteria (especially anaerobes).	Firmicutes are indicative of presence of anaerobic fermenting bacteria (mainly $Clostridia/Bacteriodes$ -like), which produce the $H_2$ necessary for reductive dechlorination
Branched Monoenoic (BrMonos)	·	In contaminated environments high proportions are often associated with anaerobic sulfate and iron reducing bacteria
Mid-Chain Branched Saturated (MidBrSats)		In contaminated environments high proportions are often associated with anaerobic sulfate and iron reducing bacteria
Normal Saturated (Nsats)	Found in all organisms.	High proportions often indicate less diverse populations.
Polyenoic	Found in higher plants, and animals.	Eukaryotic scavengers will often prey on contaminant utilizing bacteria.

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Physiological Status (*Proteobacteria*): Some *Proteobacteria* modify specific PLFA as a strategy to adapt to stressful environmental conditions (3, 4). For example, *cis* monounsaturated fatty acids may be modified to cyclopropyl fatty acids during periods of slowed growth or modified to *trans* monounsaturated fatty acids to decrease membrane permeability in response to environmental stress. The ratio of product to substrate fatty acid thus provides an index of their health and metabolic activity. In general, status ratios greater than 0.25 indicate a response to unfavorable environmental conditions.

# Glossary

Del: A Del value is the difference between the isotopic ratio ( $^{13}$ C/ $^{12}$ C) of the sample ( $R_x$ ) and a standard ( $R_{std}$ ) normalized to the isotopic ratio of the standard ( $R_{std}$ ) and multiplied by 1,000 (units are parts per thousand denoted ‰).

 $Del = (R_x-R_{std})/R_{std} \times 1000$ 

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- 1. White, D.C., W.M. Davis, J.S. Nickels, J.D. King, and R.J. Bobbie. 1979. Determination of the sedimentary microbial biomass by extractable lipid phosphate. Oecologia 40:51-62.
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- 4. Tsitko, I.V., G. M. Zaitsev, A. G. Lobanok, and M.S. Salkinoja-Salonen. 1999. Effect of aromatic compounds on cellular fatty acid composition of *Rhodococcus opacus*. Applied and Environmental Microbiology. 65:853-855.

REPORT TO:	ded to the contact(s) listed below. Parties other than the contact(s) listed	INVOICE TO:	
below will require pr		For Invoices paid by a third party it is imperative that contact information & corresponding reference No. be provided.	<b>microbial</b> insights
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			Please Check One:
Project Manager:	Bob Billman	Purchase Order No.	☐ More samples to follow
Project Name:	Solutia WGK 1Q14 GW	Subcontract No.	No Additional Samples
Project No.:	21563600		_
			Saturday Delivery
Report Type:	Standard (default)   Comprehensive (15% surchard)	rge) ☐ Historical (30% surcharge)	Please see sampling protocol for instructions
Please contact us nr	ior to submitting samples regarding questions about the analyses you are requ	resting at (865) 573-8188 (8:00 am to 4:00 nm M-F). After these hours please call (865) 300.8	2053

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	Sample Informa	tion				SIP A	nalysi	S							JI.									
MI ID (Laboratory Use Only)	Sample Name	Date Sampled	Time Sampled	Matrix	PLFA	SIP-Benzene	SIP-Chlorobenzene																Other:	Other: Other:
084LC1	BSA-MW-1S-0314	3/24/2014	1500	Water	Х			)									П							
2	BSA-MW-2D-0314	3/24/2014	1200		Х	Х																		
3	BSA-MW-3D-0314	3/24/2014	1100		Х					П													$\neg$	
4	BSA-MW-4D-0314	3/24/2014	1600		Х				T														$\neg$	
5	BSA-MW-5D-0314	3/24/2014	0945		Х			)	T			П												
6	CPA-MW-1D-0314	3/24/2014	1430		Х																			
7	CPA-MW-2D-0314	3/24/2014	1540		Х												П							$\top$
8	CPA-MW-3D-0314	3/24/2014	1230		Х		Χ						-								-			
9	CPA-MW-4D-0314	3/24/2014	0930		Χ					lt.														
10	CPA-MW-5D-0314	3/24/2014	1030	V	Х																			
Relinquished by:	-Cht	3/24/14	1600	•		Re	ceived by				P	in	Date 1 a	nt	a	5	3/2	5/14	1					

In order for analysis to be completed correctly, it is vital that chain of custody is filled out correctly & that all relative information is provided. Failure to provide sufficient and/or correct information regarding reporting, invoicing & analyses requested information may result in delays for which MI will not be liable. \*additional cost and sample preservation are associated with RNA samples.